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## REVIEW ARTICLE

### Online Romance Scams: Relational Dynamics and Psychological Characteristics of the Victims and Scammers. A Scoping Review

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#### Abstract:

##### Background:

Digital communication technologies can overcome physical, social and psychological barriers in building romantic relationships. Online romance scams are a modern form of fraud that has spread in Western societies along with the development of social media and dating apps. Through a fictitious Internet profile, the scammer develops a romantic relationship with the victim for 6-8 months, building a deep emotional bond to extort economic resources in a manipulative dynamic. There are two notable features: on the one hand, the double trauma of losing money and a relationship, on the other, the victim's shame upon discovery of the scam, an aspect that might lead to underestimation of the number of cases.

##### Objectives:

This paper presents a scoping review of the quantitative and qualitative evidence on this issue, focusing on epidemiological aspects, relational dynamics, and the psychological characteristics of victims and scammers.

##### Methods:

A literature scoping review was conducted using electronic databases and descriptors. Studies were included if they had analyzed the phenomenon in any population or the relationship dynamics characterizing it through whatsoever typology of design. Scoping reviews are a form of knowledge synthesis, which incorporates a range of study designs and wide eligibility criteria to comprehensively summarize evidence with the aim of informing practice, programs, and policy and providing direction to future research priorities.

##### Results:

Twelve studies were included. Sixty-three percent of social media users and 3% of the general population report having been a victim at least once. Some psychological variables appear to be associated with the risk of being scammed, such as female gender, middle-age, higher levels of neuroticism, tendencies to the romantic idealization of affective relations, sensation seeking, impulsiveness and susceptibility to addiction. We analyse literature limitations and future directions.

##### Conclusion:

Since this emerging phenomenon is still largely unrecognized, understanding the psychological characteristics of victims and scammers will allow at-risk personality profiles to be identified and prevention/intervention strategies to be developed.

**Keywords:** Internet dating fraud, Online identity fraud, Online deception, Personality, Digital technologies, Review.

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## 1. INTRODUCTION

Over the last twenty years, the rapid development of digital communication technology has given rise to new forms of social interaction and romancing on web sites, social media and

dating apps [1, 2]. There are four main reasons why these tools have become increasingly widespread in the search for emotional attachment [3, 4]. Firstly, the new communication technologies ensure anonymity that would not be possible in real life and thus offer the advantage of reducing fear of social judgement and rejection. A second element, linked to the first, is the fact that they allow users to choose and even actively

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modify their physical and personality profile [5]. Thirdly, they are logistically advantageous in that they allow people with little free time to satisfy their need to cultivate relationships at any time of the day or week. They provide new forms of communication that real interactions do not possess, such as the option of pausing communication to modulate an emotional response, using a repertoire of instruments that amplify natural non-verbal language (e.g., flirtatious emoticons, video and photo sharing). Lastly, this communication channel is particularly attractive because “perfect matches” can be automatically created using scientific algorithms that match the profiles of registered users based on common values, interests, geographic position, aesthetic preferences and religious affiliation [6].

According to these aspects, around 1400, dating sites and chats have been created over the last decade in North America alone [7]. Statistics show that solely in the United Kingdom, roughly 23% of Internet users have met someone online with whom they had a romantic relationship for a certain period and that even 6% of married couples met through the web [8].

While communication technologies have revolutionized, and continue to revolutionize, the modalities of interaction and the building of emotional attachment on the one hand, on the other, the online dating industry has given rise to new forms of pathologies, crime and deviance [9 - 11], and above all, to so-called Online Romance Scams, in other words, to relationships constructed through websites for the purpose of deceiving unsuspecting victims in order to extort money from them [12, 13]. It is estimated that in 2008 alone in the United States, victims of online dating fraud lost an average of 3000 dollars [14].

Over the last decade, various authors have focused on the phenomena of Internet dating scams, providing converging definitions and identifying a series of prototypical relationship dynamics [15, 16]. The phenomena are based on the creation of a fictitious profile by the perpetrator of the crime that is associated with one or more images of another person and on a written text whose content generally regards various aspects of the person’s life story, interests and, especially, values. The photos are generally images stolen from the web of a particularly attractive person such as a young soldier, athlete, or model. The first phase, “grooming”, which starts after initial contact between the scammer and the potential victim has been made, generally lasts 6-8 months and consists of daily communication with the victim to establish a warm, trusting, the increasingly affectionate atmosphere of similar interests and values, that culminates with extremely passionate declarations after a few weeks.

The scammer always acts empathetically and attempts to create the impression in the victim that the two are perfectly synced in their shared view of life. The declarations of the scammer become increasingly affectionate and according to some authors, a declaration of love is made within two weeks from initial contact [17]. After this hookup phase, the scammer starts talking about the possibility of actually meeting up, which will be postponed several times due to apparently urgent problems or desperate situations such as accidents, deaths, surgeries or sudden hospitalizations for which the unwitting

victim will be manipulated into sending money to cover the momentary emergency. Using the strategy of “testing-the-water”, the scammer asks the victim for small gifts, usually to ensure the continuance of the relationship, such as a webcam, which, if successful, leads to increasingly expensive gifts up to large sums of money [18].

When the money arrives from the victim, the scammer proposes a new encounter. The request for money can also be made to cover the travel costs involved in the illusory meeting. In this phase, the victim may start having second thoughts or showing doubt about the intentions of the partner and gradually decide to break off the relationship. In other cases, the fraudulent relationship continues or even reinforces itself as the victim, under the influence of ambivalent emotions of ardor and fear of abandonment and deception, denies or rationalizes doubts to manage their feelings. In some cases, the scammer may ask the victim to send intimate body photos that will be used as a sort of implicit blackmail to further bind the victim to the scammer [19]. Once the scam is discovered, the emotional reaction of the victim may go through various phases or have various contrasting aspects at the same time: feelings of shock, anger or shame, the perception of having been emotionally violated (a kind of emotional rape), loss of trust in people, a sensation of disgust towards oneself or the perpetrator of the crime, a feeling of mourning – the so-called “double whammy” *i.e.*, the trauma of having lost both money and a person [20].

Despite increasing interest in the topic, there is still no review of existing studies on online romance scams. This paper describes a scoping review exploring the literature on the relationship dynamics at various phases of the fraud, the epidemiological aspects, and the psychological aspects of victims and scammers. Scoping reviews are a form of knowledge synthesis, which incorporates a range of study designs and wide eligibility criteria to comprehensively summarize evidence with the aim of informing practice, programs, and policy and providing direction to future research priorities [21].

## 2. METHODS

### 2.1. Inclusion and Exclusion Criteria

In a phase previous to the conduction of the review, the objectives and methodology were reported in a protocol that can be requested from the author in charge of correspondence. The methodology is based on the PRISMA guidelines for the conduction of scoping review studies [21].

Studies were included if they (a) had investigated any aspects related to the phenomena of online romance scams, particularly in reference to socio-demographic or psychological characteristics of the victims and the perpetrators, or their cognitive, emotional and behavioural experiences; if they had analyzed the phenomenon in any population of reference or the relationship dynamics characterizing it; (b) had studied typology of population in whatsoever age or ethnic group, *i.e.* in the general, university or clinical population (e.g. patients with psychiatric disorders), the populations of online dating scam victims, online dating site users, social media users, or perpetrators of online crimes; (c) were based on whatsoever

typology of study design (for example, single cases or a series of cases, observational studies, surveys, psychometric studies on the validation of measurement tools aimed to assess constructs related to online romance scams, qualitative studies); (d) reported quantitative data on participant samples or qualitative results; (e) made use of typology of evaluation tool (self-report questionnaires, validated or not; standardized or not-standardized interviews; content and qualitative analyses of scammer website posts and web profiles); (f) were published or pending publishing in scientific journals, or had not been published (*i.e.*, grey literature like congress presentations, degree dissertations, or Ph.D. theses); (g) were in English, Italian, Spanish, French or German; (h) were contributions realized and/or published in whatsoever date.

Moreover, in order to be included, studies had to have made explicit reference to the topic of online romance scams in the text of the article and the topic had to be the main focus of the paper as suggested by the use of one of the keywords or descriptors reported in the paragraph “Bibliographic research strategies and study selection procedure”. Moreover, the authors had to have described the phenomenon of online romance scams in their article according to descriptions made by Whitty and Buchanan [12], where it is defined as a confidence trick involving feigning romantic intentions and showing empathetic attitudes/feelings towards a victim, gaining their romantic affection, and then using that goodwill to commit fraudulent acts such as accessing to the victim's bank account, credit card, passport, and e-mail account.

Reviews, position/opinion papers, studies investigating online fraud without focalizing specifically on romance scams (*e.g.*, online financial frauds), papers on the use of digital technologies as dating tools (online dating), articles only on the economic costs of online romance scams or the legal aspects of this crime were excluded.

## 2.2. Bibliographic Research Strategies and Study Selection Procedure

The bibliographic research was conducted from 4 to 6 December 2019 independently by two of the authors (AP, GG) using the electronic databases PubMed, Scopus and Google Scholar. The following online romance scam descriptors were used, connected by the Boolean operator OR: “Internet dating” OR “Internet dating scams” OR “Online dating fraud”, “Online romance scams”, “Online deception”, “Identity fraud”.

The two authors who carried out the searches also independently selected the studies, firstly based on the title, then on the abstract, and lastly, by reading the entire article.

At the end of each of the first two phases, they compared the articles selected and where there was a selection discrepancy, the articles were kept in the group of included articles until the last selection phase based on reading the entire article (see further on). Studies excluded during the first two phases were duplicates or studies relating to concepts not pertinent to the topic of the review. No formal evaluation procedure of inter-rater reliability was used (*e.g.*, Cohen's Kappa coefficient calculator). During the third and final phase of selection, all the articles that had been kept were evaluated by the two authors based on the inclusion/exclusion criteria.

For the studies where there was no agreement on inclusion, an evaluation by a third author (FF) who had not participated in the initial selection was requested. This latter author read the articles without knowing the judgement of the other two authors, evaluated whether to include it or not, and then met up with the other two to resolve the selection discrepancy.

## 2.3. Extraction Procedure and Data Synthesis

The extraction of data contained in each article was carried out independently by the two authors selecting the articles. Each one read the entire included article, extracting the required data and inserting them in a specially created excel file. The two authors subsequently met with the third author (FF), who was charged with ensuring that the data was correctly extracted and inserted and with checking any discrepancies so they could be resolved together with the other two authors.

The following information was extracted: (a) name of first author of the article (in the case of articles with only two authors, the names of both authors were extracted), (b) year of publication, (c) country in which the study was carried out, (d) language of publication, (e) objective of the study, (f) study design, (h) population of reference, (i) evaluation tool(s) used to measure the variables examined, (l) main results divided into two typologies (1. Typical online romance scam relationship dynamics; 2. Psychological characteristics of scammers and victims and epidemiological aspects).

Both the qualitative and quantitative results extracted from the papers were grouped into two key domains: (a) relationship dynamics related to online romance scams (the psychological, cognitive, emotional, behavioural experiences and reactions of the victims during the various phases of the scam; coping styles used by victims to manage the problem; strategies and victim luring modalities adopted by the scammers, web profile contents; communication modes used by both parties), (b) psychological characteristics of the victims, of persons at risk for scams, and of the scammers (personality traits and any other psychological risk factors or psychological protective factors) and epidemiological aspects (prevalence data and incidence of the phenomenon in whatsoever type of reference population; socio-demographic characteristics and/or geographic position of the victim or scammers).

## 3. RESULTS

### 3.1. Study Selection Process Outcome

The electronic database search initially yielded a total of 162 articles Fig. (1). Of these, 143 were excluded by both evaluators in the first phase of selection based on the title or the abstract, since they investigated concepts not related to online romance scams, were duplicates or did not satisfy inclusion or exclusion criteria. In the last selection phase of reading the entire article, 29 articles were evaluated, of which 17 were excluded because they were articles of literature reviews ( $n = 10$ ), articles on online fraud but not romance fraud ( $n = 4$ ), or were on the topic of online dating without a scamming objective ( $n = 3$ ). Hence, 12 articles were included in the review.

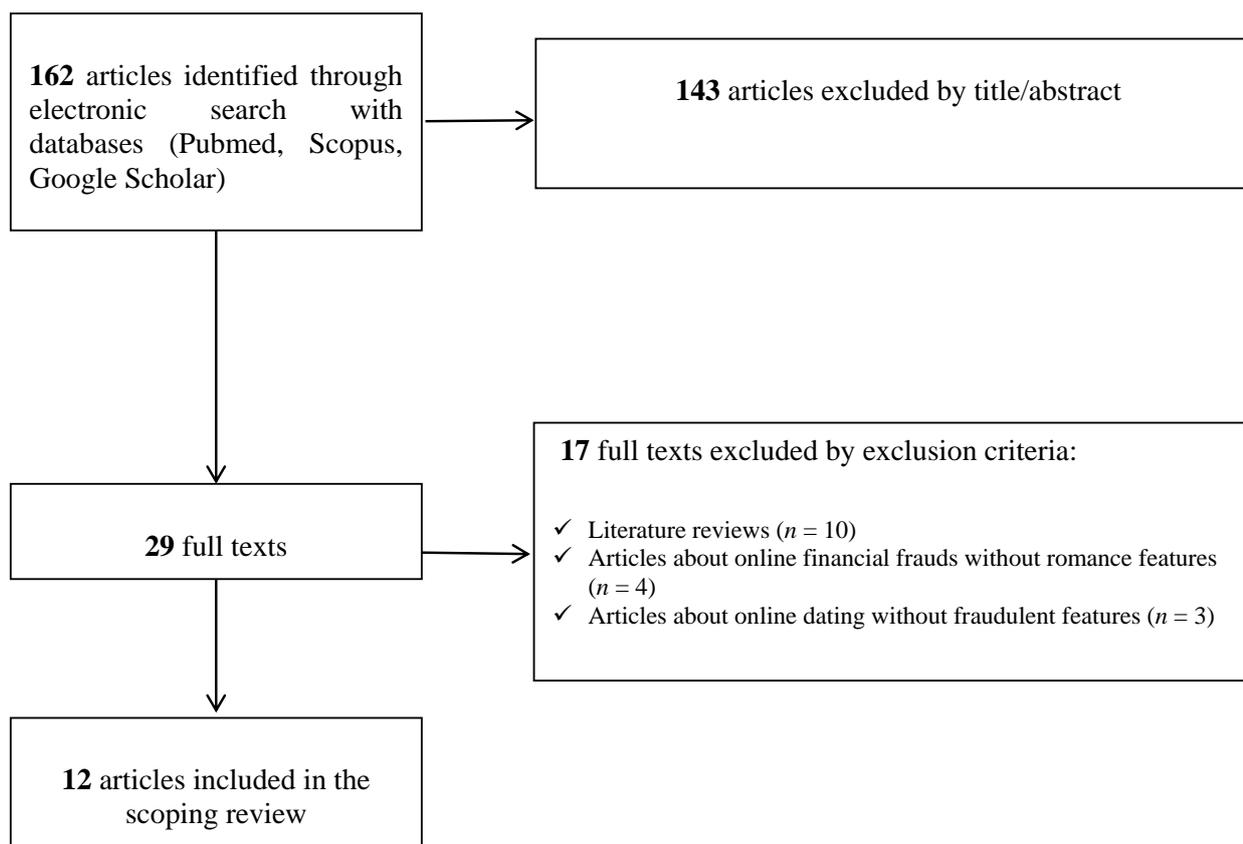


Fig. (1). Flowchart of the selection process.

3.2. Description of Study Characteristics

The characteristics of the included studies are presented in Table 1. Five studies explored the typical relationship dynamics of online romance scams, while seven investigated the psychological characteristics of scammers and victims and the associated epidemiological aspects.

All the studies were in English. Regarding the country in which the studies were carried out, all were in anglophone contexts (8 studies in the United Kingdom, 2 in the United States, 1 in Australia) except for 1 study carried out in Nigeria. The studies were conducted or published between 2012 and 2019 inclusively. Four studies were based on an analysis of qualitative data, 3 on an observational design, 3 were surveys, 1 study was based on the psychometric analysis of a tool and 1 study was based on a series of cases. The sample size in the various studies ranged from 3 to 510,503 cases. Four studies used interviews, 4 self-report questionnaires, 4 analyzed the web profiles of scammers or the posts left by scam victims on websites and 1 study analyzed the geolocalization of the Internet IP addresses of scammers. Four studies were

conducted on victims of online romance scams, 3 on the general population, 2 on social media users or dating websites and 3 on web profiles of scammers.

3.3. Typical Relational Dynamics of Online Romance Scams

In the 5 studies that explored this aspect of the phenomenon, one study [22] described the typical strategies adopted by scammers to lure and manipulate victims as reported by the victims themselves, identifying three main dynamics, i.e., “Speaking about the relationship as being permanent” (within a short time of initiating contact, the scammer tends to speak about the relationship as being permanent, often proposing marriage), “Tragic biographic narratives” (the scammer tends to report a series of tragic events in their lives such as the loss of a wife or children, accidents, or loss of their job), “Deadline” (the scammer imposes deadlines on the victim for supplying money to resolve the tragic events that have happened to them, without which it may not be possible to continue the relationship or meet in person).

Table 1. Data extracted from the primary studies included in the scoping review (n= 12).

RELATIONAL DYNAMICS OF ONLINE ROMANCE SCAMS									
Author	Year	Language	Country	Reference Population	Sample Size	Research Design	Study Objectives	Measures	Results

(Table 1) cont.....

Archer [22]	2017	English	United States	Stories of victims of Online Romance Scams from a public, online blog where roman-ce scam victims were encouraged to share details regarding what happened to them	82	Qualitative study	To identify common themes related to the persuasion tactics used by online romance scammers through an analysis of first-hand stories told by victims	Content analysis of first-hand stories told by victims	<p>Three key themes were identified in the stories of the victims:</p> <ul style="list-style-type: none"> <li>-“Speaking about the relationship as being permanent” (the victims say that the scammer within a short time from the beginning of the contacts tends to speak about the relationship as something eternal, often making a marriage proposal).</li> <li>- “Tragic biographic narratives” (the scammer tends to report a series of tragic events in his/her life, such as the loss of his/her wife or children, accidents or loss of work).</li> <li>-“Deadline” [the scammer imposes deadlines on the victim to comply with, for example in providing sums of money to resolve the tragic events that suddenly occurred to the scammer (e.g. medical treatment for accidents/illnesses). If these sums are not paid, they can prejudice the continuation relationship and the chance to meet live].</li> </ul>
Sorell and Whitty [23]	2019	English	United Kingdom	Women victims of Online Roman-ce Scams	3	Case series	To assess the psychological reactions of victims after the discovery of the Online Roman-ce Scam	Semi-structured interview	<p>Three 60-year old women (2 in the United Kingdom, 1 in Canada). For one, the scammer said to be a divorced middle-aged Canadian man who lived in Turkey for work. For another one, he was a 40-year-old British Army soldier. For the third one, the scammer said to be an American Army general engaged in a peacekeeping mission in the Middle East.</p> <p>In all three cases, the scammer requested large sums of money to solve problems that had occurred suddenly.</p>

(Table 1) cont.....

Stanton [24]	2016	English	United States	General population	-Study 1 n = 410  -Study 2 n = 294	Psychometric study on the properties of the Measures of Online Deception and Intimacy (MODI)	To investigate person-ality and psychopathological characteristics associated with the tendency to present a deceptive self-profile to obtain benefits, through the development and psychometric analysis of the properties of a specific measurement instrument	Computerized Adaptive Test of Personality Disorder Static Form [CAT-PD-SF; 25], Expanded Version of the Inventory of Depression and Anxiety Symptoms [IDAS-II; 26], NEO Personality Inventory-3 [NEO-PI-3; 27]	-The scale showed adequate psychometric properties and a bifactorial structure formed by a factor called as "Online Deception" (the tendency to present a misleading and deceptive profile of self) and a factor called as "Online Intimacy" (the tendency to use the Internet as a channel to build social interactions).  -The scores on the "Online Deception" subscale negatively correlated with those on personality measures based on the Big Five theoretical model (e.g., conscientiousness and agreeableness) and positively with neuroticism measures.
Whitty [28]	2015	English	United Kingdom	- Study 1: online posts of victims of Online Romance Scams in a dating website  - Study 2: victims of Online Romance Scams	-Study 1: 200 online posts -Study 2: 20 victims of Online Romance Scams	Qualitative study	To assess the relational dynamics of Online Romance Scams	Study 1: analysis of online posts  Study 2: semi-structured interview	- Study 1: 200 online posts on a dating website (50 men and 50 women victims of Online Romance Scams).  - Study 2: 13 women and 3 men victims of Online Romance Scams, one woman and 3 men; age range = 18-71 years. Lost money ranges from 300 to 240,000 sterling.
Whitty and Buchanan [13]	2016	English	United Kingdom	Victims of Online Romance Scam	20	Qualitative study	To assess the psychological impact of Online Romance Scams on victims	Semi-structured interview	-19 participants live in the United Kingdom except one in the United States -Age ranges from 38 to 71. The amount of lost money ranges from 300 to 240,000 sterling. -8 key themes are identified: - "Emotional/psychological state after the scam" - "Others in the victims' lives" - "Change in self and social situation" - "Problems associated with the loss of 'the' relationship" - "Stages of grieving" - "Attributions" - "Ways of coping" - "Future view of relationships"
<b>EPIDEMIOLOGICAL AND PSYCHOLOGICAL CHARACTERISTICS OF SCAMMERS AND VICTIMS</b>									
<b>Author</b>	<b>Year</b>	<b>Language</b>	<b>Country</b>	<b>Reference Population</b>	<b>Sample Size</b>	<b>Research Design</b>	<b>Study Objectives</b>	<b>Measures</b>	<b>Results</b>

(Table 1) cont.....

Buchanan and Whitty [18]	2014	English	United Kingdom	-Study 1: users of a European dating website -Study 2: users of a website victims of Online Romance Scams	-Study 1: 853 -Study 2: 397	Observational	Study 1: to assess the effects of personality and psychological variables on the risk of being scammed.  Study 2: to assess the effects of personality and psychological variables on emotional distress subsequent to scam.	- Study 1: Five-Factor Personality Inventory [29], Brief Sensation Seeking Scale [BSSS; 30], UCLA Loneliness Scale [31]  - Study 2: the same measures used for study 1	- Study 1: Higher levels of romantic beliefs and tendencies towards the idealization of the partner predicted a higher risk of being scammed, whereas neuroticism, disposition to mental openness, extraversion, agreeableness and loneliness had not such an effect.  - Study 2: 105 men, 291 women, mean age 51.8 (range = 21-84). 88.55% reports having been victim of Online Romance Scams. Female victims, with higher neuroticism, disposition to mental openness and loneliness report a higher level of emotional distress due to scam.
Edwards [32]	2018	English	United Kingdom	Profiles of Online Romance Scammers collected on scamdigger.com, a website which contains information on scams to increase the awareness of the general population	5,402	Observational	To assess the geolocation of scammers	Analysis of the geolocation of the IP addresses associated with the scammers' profiles	About 50% of the scammers come from African countries, specifically Nigeria (30%) and Ghana (13%), then 16% from Asia (Malaysia, Turkey, India, Philippines) and English-speaking countries (United Kingdom and United States)
Huang [33]	2015	English	United Kingdom	Online Romance Scams made over 11 months between 2012 and 2013 on the website DATINGSITE	510,503	Observational	To assess the socio-demographic characteristics of the scammers	Content analysis of the profiles of the scammers	- 50% of scammers report that they are at least 46 year-old  -51% say they are widowed, 34% divorced, while 15% single  -Most scammers contact at least 100 Internet profiles of potential victims
Jimoh and Stephen [34]	2018	English	Nigeria	Facebook users	8,763	Survey	To assess the prevalence of victims of Online Romance Scams	Self-report questionnaire with close ended questions	- Prevalence of participants who report having been victims of Online Romance Scams: 63%  - Prevalence of participants who do not know if they have been victims of Online Romance Scams: 29%  - Prevalence of participants who report not having been victims: 8%

(Table 1) cont.....

Kopp [35]	2015	Inglese	Australia	Fraudulent profiles and Internet posts published on a free European site that sensitizes the general population about Online Romance Scams	37	Qualitative study	To assess the socio-demographic characteristics and the Internet profiles of the scammers	Content analysis of Internet profiles	<ul style="list-style-type: none"> <li>- Eighteen male and 19 female profiles.</li> <li>- The age of males ranged from 40 to 60 years, the age of females was on average 20 years lower.</li> <li>- The posts consisted of a short paragraph which can be divided into four parts (a first general description of the person, a definition of hobbies and preferences, a description of the reasons why the person is looking for a romantic relationship and the type of person sought).</li> <li>- The self-presentations of the male profiles exalt masculine characteristics, positive and religious values, whereas the female profiles present themselves as self-confident and economically autonomous. In both cases, a tragic history of injustices is cited.</li> </ul>
Whitty [20]	2018	English	United Kingdom	General population recruited through online "Qualtrics"	11,780	Survey	To assess the psychological characteristics of victims of Online Romance Scams as compared with those who have never been scammed	UPPS-R Impulsive Behavior Scale	<ul style="list-style-type: none"> <li>-Prevalence of participants who report having never been scammed: 91.02%</li> <li>-Prevalence of participants who report having been scammed once: 6.17%</li> <li>-Prevalence of participants who report having been scammed several times: 2.81%</li> <li>-Individuals at higher risk of being scammed are female, middle-aged, having a high education level, are high on urgency and sensation seeking, less kind, more trustworthy, and have an addictive disposition</li> </ul>

(Table 1) cont.....

Whitty and Buchanan [12]	2012	English	United Kingdom	Adults recruited from the general population of the United Kingdom	2028	Survey	To assess the prevalence of Online Romance Scams	A question about having been victim of Online Romance Scams sent through the web moodle YouGov: <i>“In the ‘online romance scam’ criminals set up fake identities using stolen photographs (often of models or army officers) and pretend to develop a romance relationship with their victim. This is often done using online dating sites and social networking sites. At some point during the relationship they pretend to be in urgent need of money and ask for help. Many individuals have been persuaded to part with large sums of money before their suspicions are aroused. Had you heard of the ‘online romance scam’ before taking this survey?”</i>	- 902 men, 1126 women - 205 aged 18-24 years, 300 25-34, 285 35-44, 352 45-54, 886 aged 55 or older  - 0.65% reports having been scammed  - 2.28% reports knowing someone who has been scammed
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In another study [13], eight different dynamics and reactions to discovery emerged, *i.e.*: *“Emotional/psychological state after the scam”* (the experience of emotional shock due to the discovery of the scam), *“Others in the victims’ lives”* (support given by the people around the victim), *“Change in self and social situation”* (the sensation of having changed as a person and in social relationships after the discovery), *“Problems associated with the loss of ‘the’ relationship”* (the experience of trauma consequent to the loss of the relationship), *“Stages of grieving”* (the tendency to oscillate between various phases of mourning such as shock, anger, denial, depression, realization, acceptance), *“Attributions”* (the tendency to blame oneself for becoming entrapped in the scam without defending oneself), *“Ways of coping”* (attempts to manage pain after discovery), *“Future view of relationships”* (the development of alternative plans for the future).

In another study on the general population [24], the online romance scam is characterized as a phenomenon distinguished by a tendency to present a distorted, deceptive personal profile (online deception) and by a tendency to use the Internet as a channel to build social interactions (online intimacy). A strong tendency for online deception correlated with low conscientiousness and agreeableness and with strong neurotic traits [24].

**3.4. Epidemiological and Psychological Characteristics of Scammers and Victims**

In the 7 papers investigating these aspects of the phenomenon, in one study [18] a strong tendency to have romantic beliefs and to idealize relationships predict a higher risk of being a victim of online romance scams while other psychological factors do not have a significant effect (tendency

to loneliness, extroversion, agreeableness, neuroticism and sensation seeking). Moreover, female victims with higher levels of neuroticism, openness, and a tendency to loneliness experience higher levels of distress consequent to the discovery of the scam [18]. In another study, however, those at higher risk of victimization are female, middle-aged, with a high level of education and stronger traits of sensation seeking, impulsivity, trustworthiness, and a predisposition to dependency and weaker traits of agreeableness [20].

Concerning the epidemiological aspects, 88.55% of users of awareness websites on online romance scams declare themselves to be victims of this phenomenon [18]. According to the 63% of Facebook users, they were a victim at least once and 29% are not sure whether they were [34]. In the general population, 6.17% and 2.81% respectively declare they have experienced online romance scams once or more than once [20], while in another study [12], 0.65% declare they have been victims and 2.28% that they know someone who was.

Regarding the geographic position of the scammers, the sole study [32] finds that roughly 50% of the scams originate in African countries, followed by 16% from Asian and English-speaking countries.

## 4. DISCUSSION

### 4.1. General Discussion of the Evidence

The phenomenon of online romance scams is a modern form of fraud that has gradually spread as a result of the advent of digital communication technologies. This paper is the first scoping review on the topic in the literature. The bibliographic search resulted in the selection of 12 studies, of which 5 explored the relationship dynamics arising between the victim and the criminal, while 7 investigated the psychological characteristics of victims and scammers and the associated epidemiological aspects. With the exception of one [34], all were conducted in English-speaking countries. A certain variety of research designs were evidenced; some of the qualitative types, others of the quantitative type.

Specific strategies adopted by scammers to lure and manipulate victims were evidenced, *i.e.* a tendency to define the relationship as being eternal, to report a series of tragic events and impose urgent deadlines on the victims for supplying money to resolve these sudden tragic events so that a meeting can take place, which is constantly postponed.

The emotional and behavioural reactions of the victims can be contrasting and include feelings of shock, anger, denial, self-blame, seeking support from others, and investments in alternative plans for the future.

The variables associated with the risk of being victimized include socio-demographic aspects such as being female and middle-age. Psychological features include high levels of neuroticism, a tendency to idealize relationships, sensation seeking, impulsivity and a predisposition towards dependency.

Concerning the epidemiological aspects, the percentage of people declaring themselves victims varies according to the population considered, reaching 90% for users of websites for online romantic scam victims, 63% for Facebook users, and

1-3% of the general population.

### 4.2. Direction for Programs, Practice, Policy and Future Research Priorities

Some limits of this review should be noted, suggesting future directions for research. One aspect concerns the number of studies in the literature, which is still not very high. This element suggests that further investigation of the phenomenon is needed. Areas we consider particularly interesting for future research, especially with a quantitative methodological approach, regard the epidemiological and cross-cultural characteristics of the phenomenon, the personality profiles of the victims and the scammers, the psychological factors that increase the risk for the victims, and those that are protective thus favouring awareness in the various phases. Further investigation into the dynamics that may lead the victim to report also appears interesting.

The difference in gender between the victim and the scammer might be a moderator between the psychological impact on the former and the modalities through which the crime is committed by the latter [36]. From a clinical perspective, the association between being victim/perpetrator and specific psychiatric disorders, for example, dependent personality traits in the victims or antisocial personality [37], might warrant further investigation. It is possible to hypothesize that the discovery phase is associated with various long-term psychopathological outcomes, such as the higher risk for post-traumatic stress disorder and related complications [38, 39]. Some psycho-social and cross-cultural variables might moderate the long-term onset of psychopathologies in the victims [40].

Within this scope, it seems useful to better understand whether, and if so, in what measure, the phenomenon might be experienced by patients with severe psychiatric disorders, who could be considered an at-risk sub-population. A sub-population similarly at risk might be young people, given their use of digital communication and their higher vulnerability to a variety of psychological pathologies related to this usage [41, 42].

It is important to note that all the studies except one conducted in Africa [34] were carried out in the socio-cultural contexts of English-speaking countries. The scoping review highlighted the absence of scientific studies on the characteristics of the phenomenon in other non-English speaking countries. Equally of note is the investigation of awareness of the phenomenon among the general population and healthcare professionals, particularly of mental healthcare. Here, we suggest the importance of networking between legal institutions and healthcare services as a strategy allowing the development of new research protocols.

Lastly, an element that we consider extremely noteworthy concerns the creation of strategies to support victims, and even more important, the development of adequate tools to increase awareness, and thus prevention, in the general population. Screening tools should be developed with the aim to identify at-risk individuals by analysing personality traits and relational vulnerabilities. Mental health care centres may adopt such screening tools to monitor the risk of online romance scams in

treatment-seeking individuals with personality disorders or other clinical vulnerabilities.

In conclusion, this paper describes the first scoping review in the literature on the topic of online romance scams. It highlights some psychological factors that might outline the profiles of victims and scammers while suggesting the importance of creating awareness and prevention programs.

#### CONSENT FOR PUBLICATION

Not applicable.

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#### CONFLICT OF INTEREST

The authors declare no conflict of interest, financial or otherwise.

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