

The Relationship Between Online Dating and Adult Well-Being: A Scoping Review

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Master's Thesis Positive Clinical Psychology and Technology

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23-1-2025

Abstract

Previous research has shown online dating application use can harm adult's mental health. However, significant lacunae, such as which specific well-being dimensions are affected, exist in the knowledge of the relationship between online dating and adult well-being. This scoping review examines the relationship between normative online dating and adult well-being, regarding emotional, psychological, and social dimensions.

We systematically searched Scopus, PsycINFO, and Web of Science for empirical articles (January 1, 1995–September 21, 2024) that assessed emotional, psychological, or social well-being dimensions and subdimensions. Key study characteristics, such as population, sample size, publication year, app usage, methods, and well-being-related quantitative and qualitative findings, were systematically extracted, sorted, and charted. Quality was assessed using CASP checklists to enhance the depth of the results.

Seventeen studies met the inclusion criteria, primarily from Western countries and published in the last six years. These studies mainly examined the general population, with some inspecting minority groups, using qualitative and cross-sectional designs. The quality assessment revealed an overall positive methodological rigour. Emotional well-being was the most researched dimension, distantly preceded by psychological and social well-being, with mixed but mainly non-significant associations reported. While most studies reported non-significant impacts on self-esteem and emotional states, others indicated negative outcomes such as increased loneliness, particularly among minority groups.

In conclusion, our findings were highly context-dependent and suggest that online dating generally has non-significant associations across multiple mental well-being dimensions for the general population, with pronounced differences per marginalised group. However, the conclusions may be biased or partly incomplete, as they are based on limited numbers of emotional, psychological, and social well-being subdimensions. Limitations such

as resource constraints might have affected the reliability of the results. Future research should address cultural contexts and underrepresented well-being (sub)dimensions to improve validity.

The Relationship Between Online Dating and Adult Well-Being: A Scoping Review

Online dating refers to the use of tailored applications or web-based platforms in search of romantic relationships or sexual partners (Abramova et al., 2016). Online dating applications, as opposed to traditional dating methods, use digital interfaces, algorithms, and geolocation tools to offer users an array of possible matches based on their user behaviour, interests, and profile (Finkel et al., 2012). Online dating behaviours cover everything from casually texting and scrolling through profiles to more in-depth conversations and developing rapport for long-term partnerships (Finkel et al., 2012).

Online dating has seen a boom in popularity since 2007, which has been driven by the availability of well-known dating services such as Tinder, Bumble, Happen, Hinge, and OkCupid. The percentage of North Americans who partake in online dating is steadily increasing, from 11% in 2013 (Abramova et al., 2016) to 30% in 2020 (Vogels, 2020). The most significant popularity can be seen in young adults aged 18 to 29, with 53% of use in this age bracket (Vogels, 2020). Online dating services have proven to be effective; they are remarkable in connecting people, with 23% of users reporting finding long-term partners or spouses through online dating (Smith & Duggan, 2014). This success can be partly attributed to the app's ability to diminish practical and spatial barriers and expand one's reach to other like-minded people (Filice et al., 2022). Apps facilitate connection across distances and amongst communities that might not otherwise connect via traditional dating means (Hogan et al., 2011). Given the growing popularity of this relatively new approach to forming relationships, it is vital to understand how this technology shapes users' lives, mental health, and behaviour in the digital era.

Negative Experiences and Contribution Factors

Despite the increasing prevalence and success rates in finding long-term partners, online dating or the use of dating platforms appears to be accompanied by a plethora of negative emotions and experiences. Only 57% of users have an overall positive experience, while nearly a third encounter harassment or uncomfortable confrontations (Smith & Duggan, 2014; Vogels, 2020). Several factors contribute to these negative experiences. One major factor is the prevalence of negative online and offline interactions. Deceptive self-presentation is common, with users falsely misrepresenting themselves to appear more favourable (Buchanan & Whitty, 2013). Moreover, dating scams have become more prevalent, targeting vulnerable groups (Peng et al., 2022). Racial exclusion is another issue frequently reported, with users often feeling left out or discriminated against because they are seen as less desirable within their dating pool due to their race or ethnicity (Feliciano et al., 2009; Wade & Pear, 2022). There are also frequent accounts of negative offline experiences following interactions initiated online. These include high rates of aggression and abuse, with half of college students having experienced these issues at least once with people met through online dating (Borrajo et al., 2015).

The design of dating apps also plays a significant role in fostering these negative experiences. Dating service algorithms often marginalise individuals who receive the fewest interactions and interest from others, hiding them from the swiping pool/stack and leading to feelings of rejection, inadequacy and exclusion, while promoting popular profiles to increase engagement and revenue (Celdir et al., 2024). Furthermore, the sheer number of potential profiles and matches available can overwhelm users, making them up to 27% less likely to engage in conversations with people (Lenton & Francesconi, 2010; Pronk & Denissen, 2019).

Gender differences in online dating behaviour and expectations also contribute to negative outcomes (Abramova et al., 2016). Men often adopt a proactive approach to

establishing connections but receive less interaction, frequently focusing on sexual encounters and physical attractiveness, while women, who have more options, tend to be more selective and seek long-term stability (Abramova et al., 2016). Men are also more prone to deceptive self-presentation, using self-serving lies to appear more competent and desirable (Guadagno et al., 2012). These contrasts in goals and behaviours between men and women can create frustration and a negative shift in dating attitudes as the needs of both genders are not being met (Vogel, 2019). In conclusion, the overwhelming evidence on the prevalence of negative experiences highlights the need for a critical examination of the extent of these platform's impact on user's mental health.

Online Dating and Mental Health

A plethora of online dating research already focused on symptoms of mental illness as an outcome (Bonilla-Zorita et al., 2020; Breslow et al., 2020; Castro & Barrada, 2020; Filice et al., 2019; Strubel et al., 2017). They found that online dating significantly and negatively impacts users' relational, sexual, and mental health (Castro & Barrada, 2020). Compared to non-dating app users, users of both genders exhibit lower levels of body satisfaction and higher levels of body shaming, physical comparisons, and ideal internalization (Breslow et al., 2020; Filice et al., 2019; Strubel et al., 2017). Moreover, deliberately built-in short-term gratification mechanisms can create patterns of addiction in long-term users (Bonilla-Zorita et al., 2020). Last, online dating users also more frequently partake in more sexually risky behaviours (Sawyer et al., 2017).

Knowing the relationship between online dating and mental illness is not enough to grasp the full spectrum of possible mental health outcomes. Mental health can be best examined through the two continua model which can validly display mental health changes in individuals (Iasiello & van Agteren, 2020). In this model, mental health is described and

assessed in two separate yet related ways, i.e., mental illness and mental well-being (Westerhof & Keyes, 2009). Mental health can be influenced through either changing illness symptoms adjusting well-being or a combination (Westerhof & Keyes, 2009). Furthermore, well-being is also a construct that has its own three subfactors: emotional well-being, psychological well-being, and social well-being (Lamers et al., 2011). These three subfactors are further divided into subconstructs in a framework described by Bohlmeijer & Westerhof (2020): (1) emotional well-being encompasses positive emotion, life satisfaction and autonomy; (2) psychological well-being includes positive individual functioning, such as environmental mastery, personal growth, positive relationships, purpose in life and self-acceptance; and (3) social well-being involves social acceptance, actualization, contribution, coherence and social integration.

Despite advances in knowledge and methodological standards in examining mental health and its two factors, almost all online dating research is centred on symptomatology (Castro & Barrada, 2020). In the context of online dating, well-being has only been partly incorporated in one systematic review, in which only two domains were explored: mood and self-esteem (Bowman et al., 2024). This narrow focus leaves significant gaps regarding multiple positive and negative well-being outcomes of normal online dating platform use (Toma, 2022). Moreover, existing studies often emphasise extreme dating experiences, such as those involving the incel community, cyber dating abuse, coercion, and addiction (Duerksen & Woodin, 2019; Sparks et al., 2023). While important, these experiences are outliers and therefore do not reflect typical online dating app use where coercive or deviant behaviours are not normative (Fansher & Eckinger, 2020). One potential cause for the gap in knowledge about well-being outcomes and online dating is the lack of consensus on well-being terminology, as well-being or positive psychology is a relatively new field in research with varied definitions and subfactors (Iasiello et al., 2024). This dispute complicates research

efforts, as studies use different frameworks to describe mental well-being. Conventionally, authors group mental illness and well-being as a single construct (Bonilla-Zorita et al., 2023; Castro & Barada 2020), while others use terms like subjective well-being, psychosocial functioning, quality of life et cetera. Adopting a consistent framework, like Bohlmeijer & Westerhof's (2020), is therefore advantageous and can ensure a more holistic or comprehensive view of well-being.

Objectives

Considering the lack of research examining online dating through the lens of mental well-being, this scoping review was conducted to bridge the gap between the positive psychology construct of well-being and its relationship to normative, non-deviant or pathological, online dating in adults. Specifically, this review aims to systematically map and provide an overview of the existing literature on the relationship between typical online dating platform use and user's emotional, psychological, and social well-being outcomes, analysed through the framework presented by Bohlmeijer & Westerhof (2020). Lastly, it seeks to identify research gaps or unexplored areas related to psychological, emotional, and social well-being outcomes in the context of online dating and to provide recommendations for future research. The research questions guiding this review are:

1. What is the extent of the empirical literature on the relationship between online dating and adult users' well-being?

1a. What types of sample size, country of origin, dating apps, and population characteristics are well represented in the online dating and well-being literature?

1b. What types of study designs and methods have been used in research on online dating and adult users' well-being?

1c. What well-being dimensions and subdimensions are examined in studies of online dating?

1d. What qualitative findings and quantitative associations have been identified between online dating and well-being outcomes?

Methods

This study employed a scoping review methodology to address the complex and heterogeneous subject of online dating and well-being. Specifically, this method was chosen to: (1) evaluate the coverage of existing literature on the topic; (2) identify the types of evidence available; (3) review research methods and main characteristics of relevant studies; and (4) highlight research gaps (Munn et al., 2018). Additionally, this scoping review can serve as a foundation for future comprehensive systematic literature reviews (Arksey & O'Malley, 2005). The review followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) guidelines (Tricco et al., 2018), which are detailed in Appendix A. No review protocol or (pre)registration was conducted.

Search Strategy

A search strategy was developed to find a broad scope of relevant articles on the effects of typical online dating practices on mental well-being, or more specifically effects on the three main factors of well-being: (1) social well-being; (2) emotional well-being; and (3) psychological well-being (Bohlmeijer & Westerhof, 2020). The search was conducted by the main author (DE) through an iterative search of key terms used in online dating literature and literature surrounding well-being. The majority of keywords originated from a validated framework of the dimensions of emotional, psychological, and social well-being and 14 well-being subdimensions (Bohlmeijer & Westerhof, 2020). These 14 key subdimensions include positive affect, life satisfaction, and the absence of negative affect (emotional well-being); autonomy, environmental mastery, personal growth, positive relations, purpose in life, and self-acceptance (psychological well-being); and social integration, social contribution, social coherence, social actualisation, and social acceptance (social well-being) (Diener et al., 1985; Keyes, 1998; Ryff, 1989). Additionally, nine related terms: competence, connection,

engagement, flourishing, happiness, meaning, optimism, self-esteem and spirituality were identified from Iasiello et al.'s (2024) umbrella review of 155 measures of positive mental health and were subsequently incorporated into the search string. Population terms, i.e. “adults”, were not added to the search string to increase the search’s reach. The complete search strategy was employed and finalised on September 21st 2024, in several scientific databases to ensure a thorough exploration of the research subject. Scopus, Web of Science, and PsycINFO were the scientific databases queried in this review. Table 1 presents the search string for the three databases, organised under the relevant PICO elements.

Table 1*Full-text Search Strings Employed in Databases*

Databases and Search Field	PICO Search Terms
Scopus (TITLE-ABS-KEY)	Intervention: "online dating" OR "digital dating" OR "dating app*" OR "dating website" OR "internet dating" OR "online romance" OR "cyber dating"
Web of Science (TS)	Outcome: "wellbeing" OR "well-being" OR "well being" OR "flourishing" OR "positive affect" OR "negative affect" OR "life satisfaction" OR "quality of life" OR "happiness" OR "optimism" OR
PsycINFO (TX)	"autonomy" OR "environmental mastery" OR "personal growth" OR "positive relationship*" OR "relationship quality" OR "purpose in life" OR "meaning" OR "self-acceptance" OR "engagement" OR "competence" OR "spiritual*" OR "social acceptance" OR "social actualization" OR "social contribution" OR "social coherence" OR "social integration" OR "connection" OR "psychosocial" OR "self-esteem" OR "psychological health" OR "relationship satisfaction" OR "loneliness"

Screening Process

After the search strategy was performed all articles or records were imported into Covidence, and duplicates were automatically removed. Covidence is a web-based platform that aids systematic reviews by streamlining the evidence synthesis (Babineau, 2014), and

supports our screening process, quality assessment, and data extraction. The phases of the screening process and the number of articles retrieved at each phase are reported using a PRISMA flow diagram and can be found in Figure 1. In the first phase of screening, DE screened imported articles for relevance to the central research question, in their titles, authors, and abstracts, resulting in a preliminary selection. Then, the selection was examined and filtered based on inclusion and exclusion criteria. Articles were determined eligible for inclusion if they: (1) examined the typical use of dating platforms and frequently occurring dating app phenomena such as rejection, disappointment, ghosting, receiving and meeting matches, and engaging in conversations; (2) examined mental well-being outcomes, a higher order dimension, one of the 14 subdimensions by Bohlmeijer & Westerhof (2020) or the definitions mentioned by Iasiello et al. (2024); (3) involved adults (18 > years); and (4) were peer-reviewed original studies. Articles were excluded if they: (1) examined extreme and deviant dating behaviours such as cyber dating abuse, victimisation, incels, or coercion; (2) only examined intentions to use a dating platform; (3) only examined offline dating; (4) only examined mental illness, e.g. anxiety, depression or body satisfaction; (5) were grey literature and books, literature reviews, and dissertations; (6) could not be retrieved through available sources or by contacting the authors; and (7) were published before 1995 when online dating started (Toma, 2015). In the second phase, the full text of the articles was reviewed for relevancy to our aims. Articles were excluded if they did not measure well-being, specific well-being dimensions or subdimensions, focused on populations other than adults (e.g., teenagers), or examined contexts outside of online dating. The inclusion and screening process was presented in full in the PRISMA flow diagram, see Figure 1 in the results section.

Data Extraction, Charting and Summary

The extraction of relevant study characteristics was done via a self-constructed data extraction form, which can be found in Appendix B. This form was first piloted in three studies to ensure that all relevant information surrounding study characteristics and well-being-related findings were captured. Next, to answer research questions 1a, 1b, and 1c, the following key article characteristics were extracted for all included articles: title, author(s), publication year, country of origin, study type and design, well-being-related instruments used, study population, sample size, dating app mentioned. For research question 1d, all relevant online dating related dimensional well-being measures or findings (both quantitative and qualitative) were extracted from the articles. After the data were extracted using these forms, the data were charted with a process described by Arksey and O'Malley (2005). To answer research questions 1a and 1b we sorted and charted well-being findings while linking them to the extracted study characteristics (dating app, population, methods, sample size, year of publication, country of origin). Some studies included multiple samples; however, these were aggregated and categorised as a single study for analysis. For research question c, the included studies' instruments or measures were then thematically analysed to give an overview of the well-being dimensions and subdimensions measured in the included articles. For research question d, all extracted well-being findings (associations and qualitative findings) were thematically analysed and categorised under the corresponding dimensions (emotional, psychological, and social well-being) and 14 lower-ranking subdimensions of mental well-being, utilising the robust well-being framework of Bohlmeijer & Westerhof (2020).

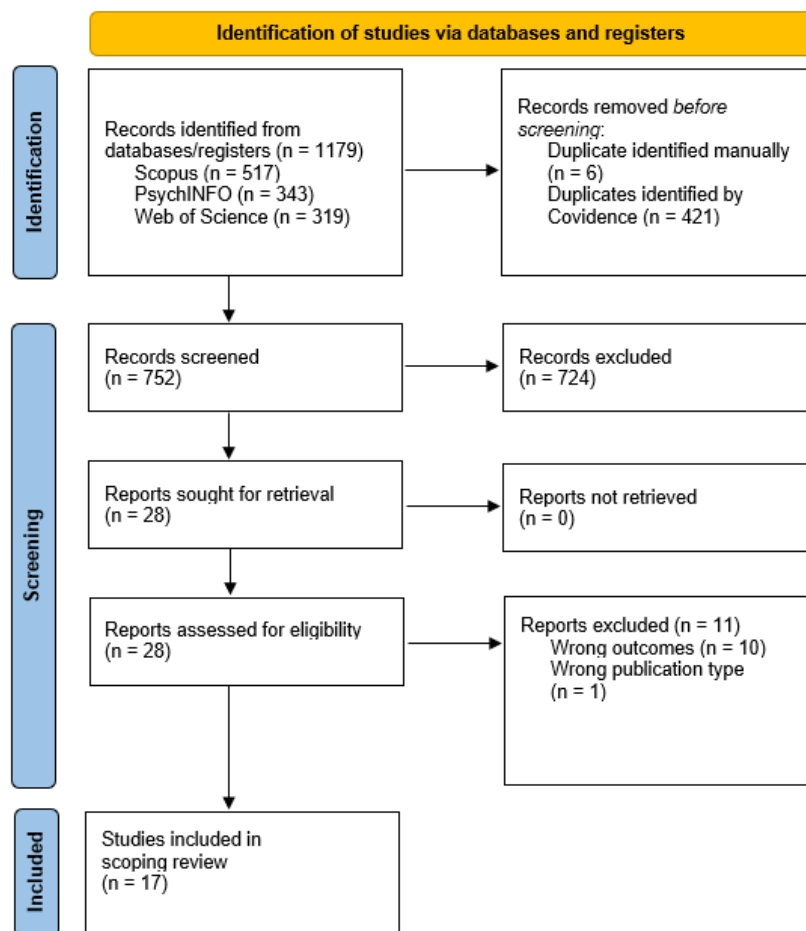
Quality assessment

To evaluate the risk of bias of the retained studies', the Critical Appraisal Skills Programme (CASP) checklists were utilised (Critical Appraisal Skills Programme, 2018a). These checklists provide a systematic approach to quality assessment of trustworthiness and methodological quality in a multitude of study methodologies through multiple method-specific criteria. DE assessed each study using the CASP checklists for qualitative and cross-sectional studies (Critical Appraisal Skills Programme, 2018a; 2018b). In this assessment, cross sectional and ecological momentary assessment (EMA) studies are pooled and assessed using the same CASP checklist, as other checklists insufficiently account for EMA's unique observational structure. Additionally, the study designs share core characteristics, i.e. both are quantitative, non-randomized approaches and share methodological alignment in data assessment criteria (Critical Appraisal Skills Programme, 2018a). In compliance with Cochrane's recommended practice, no numerical scoring was added as the CASP items are not all equal in their qualitative importance and therefore give a false sense of precision (Long et al., 2020; Noyes et al., 2017). Furthermore, setting subjective cutoff scores would be arbitrary and methodologically unsound (Noyes et al., 2017). The CASP item scores are visualised for each study using a stoplight system: red indicates no representation or a higher risk of bias, orange reflects uncertainty, and green signifies the presence of the item with low bias or good reliability. Full results are detailed in Appendix C and the results section.

Results

Screening and Selection Process

The PRISMA flowchart, found in Figure 1, illustrates the systematic process of study selection in this scoping review. It shows the number of studies identified, screened, and included. A total of 1,179 references were imported into the screening phase of Covidence. These references originated from three major scientific databases: Scopus (n = 517), PsychINFO (n = 343), and Web of Science (n = 319). Of the initial imports, 421 duplicates were identified and removed via Covidence and six duplicates were manually removed. Following title and abstract screening, 752 studies were excluded, leaving 28 studies for full-text eligibility assessment. Next, 11 studies were excluded from the full-text screening for various reasons: ten studies examined outcomes that were not in line with this study's aim and one study was a scientific newspaper article. Finally, 17 met the inclusion criteria and were included in the scoping review.

Figure 1*PRISMA Screening Flow Diagram***Study Characteristics of Included Studies**

The 17 studies vary in their design, population and sample size, country of origin, dating apps mentioned, and well-being findings. Table 2 summarizes these characteristics per study. All studies were published between 2018 and 2024, with a notable increase from 2020 onward, see Figure 2. The data reveals a significant Western bias, with 82.35% of studies conducted in Western countries. This leaves only 17.65% originating from non-Western contexts, specifically China and Indonesia.

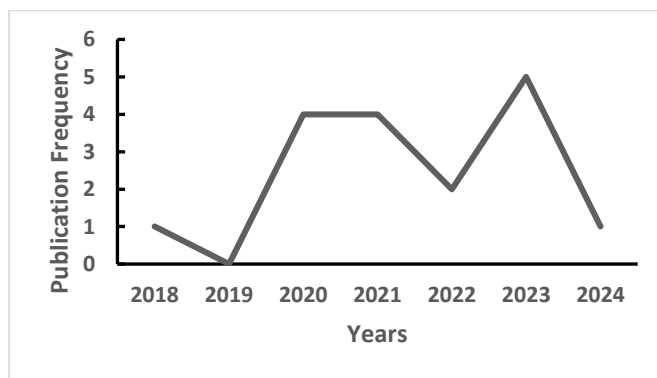
The populations studied were diverse, with the general population being the most common focus (n = 6; 35.29%). Other groups included emerging adults (ages 18 to 29, n = 3;

17.65%), sexual minority men (e.g. gay and bisexual men) (n= 4; 23.53%), women (n= 1; 5.88%), university students (n= 1; 5.88%), transgender and non-binary individuals (n= 1; 5.88%), and adults under COVID restrictions (n= 1; 5.88%). The studies most often examined populations on multiple, often unspecified dating apps. When studies decided on single app use, Tinder was always the application of choice.

Sample sizes ranged from as few as 12 participants to 25,844 participants, with a median of 282. There were five small samples ($n < 100$), 13 moderate samples ($100 \leq n \leq 1000$), and two large samples ($n > 1000$). Notably, two studies collected multiple samples; one conducted a multinational analysis and the other conducted analyses for two separate samples (Benjamin & Wang, 2022; Cargnino & Lemke, 2023). These studies are

Figure 2

Number of Studies Published per Year



Study Types & Designs

Two study types were identified in the data: quantitative and qualitative studies. The majority of studies used quantitative methods, with cross-sectional designs being most prevalent (n = 11; 66.7%), followed by EMA (n = 2; 11.1%). Qualitative designs included semi-structured interview methods (n = 2; 11.1%) and qualitative surveys (n = 2; 11.1%).

Table 2*Study Characteristics of Papers Considering the Relationship Between Online Dating and Well-being in Adult Users*

Study #, authors and year	Country of Origin	Study Type & Design	Sample Size (N)	App	Key Findings			
					Population	Intervention	Comparator	Outcome
1. Portingale et al., 2022	Australia	Quantitative: EMA	296	Multiple	Female dating app users, aged 1-48.	Use of dating apps.	Comparing use to non-use amongst women.	No significant association with negative mood. Potential significant (underpowered) association with negative state level mood.
2. Bonilla-Zorita et al., 2023	UK	Quantitative: EMA	22	Multiple	Adult users of dating apps.	Use of dating apps and associations with mood and self-esteem, measured in real-time.	N/A	The time spend on dating apps had no significant effect on mood or self-esteem.
3. Her & Timmermans, 2021	Belgium	Quantitative: cross sectional	296	Single App: Tinder	Emerging US adults using Tinder compulsively.	Time spent on dating apps.	Differences in usage patterns and motives.	Weak link to joviality, strong association with sadness and anxiety. Perceived success increased happiness and reduced negative emotions, while social comparison had the opposite effect. Relationship-seeking brought mixed emotions, including joy, but led to sadness and anxiety due to unmet expectations.
4. Hu & Rui, 2023	China	Quantitative: cross sectional	361	Multiple	Dating app users between 18 and 60 years.	Preference for Online Social Interaction (POSI)	N/A	Compulsive use is associated with higher joviality, not with sadness. Negative algorithmic beliefs moderates an association with sadness. Effect vanished at moderate or high levels of algorithmic beliefs.
5. Benjamin & Wang, 2022	USA	Quantitative: cross sectional	USA = 95 MEX = 102 JAP = 105	Multiple	Adults from the US, Mexico, and Japan.	Use of various social technologies, including dating apps.	Different types of technology and use vs. less use.	Greater dating app usage by adults was associated with lower levels of both distress and happiness, the association disappeared when controlling for total social technology use.
6. Timmermans et al., 2021	Netherlands	Qualitative: survey	328	Single App: Tinder	Dutch speaking mobile dating app ghosters and ghostees.	Experiencing ghosting on apps.	Being ghosted vs. ghosting.	The majority of Tinder users reported short terms negative emotional responses to being ghosted, including feelings of sadness, hurt, anger, disappointment or disillusionment. Some respondents experienced confusion after ghosting and a few felt ashamed, relieved or nothing at all.
7. Barrada & Castro, 2020	Spain	Quantitative: cross sectional	1261	Single App: Tinder	Young Spanish Uni students aged 18 to	Usage of the Tinder app.	Comparison with non-usage within similar demographics.	Increased use was not significant associated with negative affect, positive affect or self-esteem as a sexual partner.

26.								
8. Azzahro et al., 2018	Indonesia	Quantitative: cross sectional	692	Multiple	Indonesian dating app users	Usage of dating apps with features that allow self-disclosure and gratification.	N/A	Gratification on online dating apps can significantly increase users positive affect. Entertainment, relationship-seeking, friendship, and social inclusion gratifications, significantly enhance users' happiness and feelings of life satisfaction.
9. Cargnino & Lemke, 2023	Germany	Quantitative: cross sectional	972 & 25,844	Multiple	Gay and bisexual men in Germany.	Use of dating sites.	Usage levels.	No association with life satisfaction or affect was found, but motivations for using these platforms can influence the relationship between minority stress and well-being. The motivations, seeking social support or a partner through these platforms, can reduce the negative effects of minority stress.
10. Breslow et al., 2020	USA	Quantitative: cross sectional	230	Multiple	Sexual minority men on dating apps.	Usage of multiple apps (gay and non-gay).	Between multi-use, less use and non-use.	No association between app use frequency and self-esteem or online objectification. Number of app use was negatively associated with self-esteem, through direct and indirect objectification, internalization, body surveillance, and body satisfaction.
11. Holtzhausen et al., 2020	Australia	Quantitative: cross sectional	437	Multiple	Adult users of swiped-based dating applications	Regular use of swipe-based dating apps.	Use vs. non-use (frequency/duration).	Use was associated with increased distress. No significant relation between use and lower self-esteem.
12. Konings et al., 2023	Belgium	Quantitative: cross sectional	268	Multiple	Emerging adults that use mobile dating applications.	Experiencing ghosting on dating apps.	N/A.	There is no direct association between the experience of ghosting on self-esteem. Ghosting indirectly affects self-esteem through increased disillusionment with one's own romantic appeal.
13. Zervoulis et al., 2020	UK	Quantitative: cross sectional	191	Multiple	UK men who have sex with men on gay dating apps	Use of gay dating apps, with different usage levels.	Reason for app use, frequency and usage levels.	High frequency has been associated with increased loneliness, reduced life satisfaction, and a diminished sense of belonging to the LGBT-community. Positive association with life satisfaction and self-esteem only exist in the group that searches for sex.
14. Thomas & Dubar, 2021	USA	Qualitative: survey	76	Multiple	Emerging adults at university.	Exploration of ghosting experiences and perceived consequences.	Multiple apps used by the general population.	Ghosted adults foster feelings of invalidation, distress, and sporadically felt unwillingness to pursue further romantic relationships.
15. Griffiths & Armstrong, 2024	UK	Qualitative: interview	15	Multiple	Transgender and non-binary adults who actively use dating apps.	Exploration of experiences, gender identity expression and encounters with negative events on apps	Multiple apps that are commonly used by the LGBT-community.	Dating apps are used to build a queer community, build sexual self-esteem and find relationship with other trans people. Contrarily, they also experience self-esteem issues through negative events and a reduces sense of security.
16. Marshall et al., 2023	UK	Qualitative: interview	12	Multiple	Single UK adults on dating apps.	Motivation and experiences of using online dating platforms.	During the COVID-19 pandemic, under restrictions, social distancing and multiple lockdowns.	Adults find social connections with peers through online dating, alleviating loneliness, depression, and sadness. Dating apps were a necessity in helping people navigate the solitude of a lockdown.
17. Cao & Smith, 2023	China	Quantitative: cross sectional	371	Multiple	Gay or bisexual men in China.	Exposure to Gay China-specific dating apps.	Low or no use vs. high intensity use.	Higher use is associated with increased feelings of loneliness through internalized feelings of negative societal attitudes toward queer identities.

Well-being Dimensions and Subdimensions

The measures from each study were categorised into well-being themes or the dimensions from Bohlmeijer & Westerhof's (2020) framework, providing an overview of the emotional, psychological, and social well-being dimensions and subdimensions addressed. Six out of 14 possible subdimensions were identified. This categorisation is presented in Table 3. Some studies covered multiple aspects within a well-being domain or their coverage spanned multiple domains. Emotional well-being was the most frequently examined subfactor, with 13 out of 17 studies (76.5%) analysing affect or life satisfaction (Figure 2). Amongst these, negative affect appeared in 11 studies (64.7%), positive affect in seven studies (41.2%), and life satisfaction in three studies (17.6%). The dimension of autonomy was not represented. Psychological well-being was examined in seven out of 17 studies (41.2%), fully focusing on self-acceptance, which appeared in all seven studies. Other dimensions of psychological well-being, such as environmental mastery, positive relationships, personal growth, and purpose in life, were not represented. Social well-being ranked third, with six out of 17 studies (35.3%) covering this dimension. Social integration, reflecting connectedness and loneliness, was examined in five studies (29.4%), while social coherence appeared in two studies (11.8%). The social well-being domains of social actualisation, social contribution, and social acceptance were not included in this review.

Table 3*Overview of Well-being Domains, Subdimensions and Measures in the Included Studies*

Domain	Subdimensions	Descriptions	Well-being Related Measures	Authors and Year
Emotional well-being	Positive affect	Experience of positive emotions.	Self-constructed questionnaire on subjective well-being	Azzahro et al., 2018
	Negative affect	Experience of negative emotions.	PANAS PANAS-X SHS EMA	Barrada & Castro, 2020; Cargnino & Lemke, 2023; Her & Timmermans, 2021; Hu & Rui, 2023 Benjamin & Wang, 2022 Bonilla-Zorita et al., 2023
			PANAS K10 PANAS-X EMA	Barrada & Castro, 2020; Cargnino & Lemke, 2023; Benjamin & Wang, 2022; Holtzhausen et al., 2020 Her & Timmermans, 2021; Hu & Rui, 2023 Bonilla-Zorita et al., 2023; Portingale et al., 2022
	Life satisfaction	A subjective evaluation of one's life.	Semi-structured interview on COVID dating experiences Self-constructed questionnaire on ghosting experiences Self-constructed questionnaire on subjective well-being SWLS	Marshall et al., 2023 Timmermans et al., 2021; Thomas & Dubar, 2021 Azzahro et al, 2018 Cargnino & Lemke, 2023; Zervoulis et al., 2020
Psychological well-being	Self-acceptance	The ability to accept and acknowledge one's strengths and weaknesses in a non-judgmental way or self-esteem.	RSES	Breslow et al., 2020; Holtzhausen et al., 2020; Zervoulis et al., 2020
			SSS DiaryMood - EMA Semi-structured interview SISE	Barrada & Castro, 2020 Bonilla-Zorita et al., 2023 Griffiths & Armstrong, 2024 Konings et al., 2023
Social well-being	Social coherence	A sense of harmony and interconnectedness with your social circle.	Semi-structured interview on dating experiences	Griffiths & Armstrong, 2024
	Social integration	The extent to which people partake in social networks, communities, and society.	PSOC-LGBT UCLA-LS	Zervoulis et al., 2020 Cao & Smith, 2013; Zervoulis et al., 2020
			Semi-structured interview on dating experiences Self-constructed questionnaire on ghosting experiences	Griffiths & Armstrong, 2024; Marshall et al., 2023; Thomas & Dubar, 2021

Note. Dimensions retrieved from A new model for sustainable mental health. Bohlmeijer, E. T., & Westerhof, G. J., 2020, p. 115. In Routledge eBooks. Instruments: EMA = Ecological Momentary Assessment 1-Item Well-being Measure; K10 = Kessler Psychological Distress Scale (Kessler et al., 2002); PANAS = Positive and Negative Affect Schedule (Watson et al., 1988); PANAS-X = Extended Positive and Negative Affect Schedule (David & Clark, 1994); PSOC-LGBT = Psychological Sense of LGBT Community Scale (Lin & Israel, 2012); RSES = Rosenberg Self-Esteem Scale (Rosenberg, 1965); SHS = Subjective Happiness Scale (Lyubomirsky & Lepper, 1999); SISE = Single-Item Self-Esteem Scale (Robins et al., 2001); SLSW = Satisfaction With Life Scale (Diener et al., 1985); SSS = Sexuality Scale - Short Version (Snell & Papini, 1989; Wiederman & Allgeier, 1993); UCLA-LS = UCLA Loneliness Scale (Russell, 1996).

Well-being outcomes

The effects of dating app usage on well-being outcomes are highly context-dependent, varying across well-being domains, populations, and usage motivations. Table 4 presents the well-being associations per article. Online dating was either positively related (Barrada & Castro 2020; Benjamin & Wang, 2022; Bonilla-Zorita et al., 2023), or non-significantly related (Azzahro et al., 2018; Her & Timmermans, 2021; Hu & Rui, 2023) to positive affect. The positive associations stemmed from short-term effects contingent on the user's success in achieving dating goals (Azzahro et al., 2018; Her & Timmermans, 2021). The findings from qualitative research align with these findings, highlighting how online dating can alleviate depression during social isolation, such as during the COVID-19 pandemic, while ghosting often induces feelings of invalidation and distress, lowering positive emotion (Marshall et al., 2023; Thomas & Dubar, 2021; Timmermans et al., 2021). Negative affect was overwhelmingly unaffected by online dating and had no significant associations in six studies (Barrada & Castro 2020; Benjamin & Wang, 2022; Bonilla-Zorita et al., 2023; Cargnino & Lemke, 2023; Hu & Rui, 2023; Portingale et al., 2022), while two studies reported increases in negative emotions, often tied to ghosting and unmet expectations or feelings of invalidation (Her & Timmermans, 2021; Holtzhausen et al., 2020). Life satisfaction findings were inconsistent across three studies: one study found a positive association when there was gratification in user's dating goals (Azzahro et al., 2018), a negative association was found for the group of men who have sex with men (MSM) (Zervoulis et al., 2020), and one showed no significant effects in gay and bisexual men (Cargnino & Lemke, 2023).

The literature was unequivocal on the domain of self-acceptance, with six studies reporting no significant associations, including for sexual minority groups (Barrada & Castro 2020; Bonilla-Zorita et al., 2023; Breslow et al. 2020; Holtzhausen et al., 2020; Konings et al. 2023; Zervoulis et al., 2020). However, quantitative data revealed that transgender and non-

binary individuals had higher self-esteem through sexual motivations, and lower self-esteem through negative in-app experiences (Griffiths & Armstrong, 2024).

Social integration results tended towards negative associations, with two studies reporting increased loneliness in marginalized groups due to internalised stigma (Cao & Smith, 2023; Zervoulis et al., 2020). This is also found in ghosted individuals who often feel disinclined to continue their search for romantic partners (Thomas & Dubar, 2021). Conversely, trans and non-binary individuals frequently found social engagement and suitable partners through online dating applications (Griffiths & Armstrong, 2024), and the general population found the same social support during the COVID-19 pandemic (Marshall et al., 2023). Social coherence was minimally studied, with one study that found a negative association for MSM users who did not feel welcomed in the LGBT community on gay dating apps (Zervoulis et al., 2020). Contrarily, qualitative research described how transgenders and non-binary individuals can find LGBT support through apps (Griffiths & Armstrong, 2024). Taken together, these trends illustrate a variability across domains and demographics, with emotional outcomes being inconsistent, psychological outcomes largely unaffected, and social outcomes often negative for sexual minority groups.

Table 4

Well-being Related Associations

Authors	Emotional Well-being			Psychologic al Well- being	Social Well-being	
	Positive Affect	Negative Affect	Life Satisfaction	Self- acceptance	Social Coherence	Social Integration
Holtzhausen et al., 2020		↑		-		
Her & Timmermans, 2021 ^b	↑	↑				
Hu & Rui, 2023	↑	-				
Azzahro et al., 2018	↑		↑			
Portingale et al., 2022		-				
Bonilla-Zorita et al., 2023	-	-		-		
Benjamin & Wang, 2022	-	-				
Barrada & Castro 2020 ^b	-	-		-		
Zervoulis et al., 2020 ^a			↓	-	↓	↓
Cargnino & Lemke, 2023 ^a		-	-			
Cao & Smith, 2023 ^a						↓
Konings et al. 2023				-		
Breslow et al. 2020 ^a				-		

Note. Response options: ↑ indicates a positive association with dating application use; ↓ indicates a negative association; and - indicates a non-significant association. ^a: Sexual minority group. ^b: Single app use: Tinder.

Quality Assessment

Table 5 summarises the results of the quality assessment. Each study received a total score and a corresponding percentage to create an overview.

Table 5

Quality Appraisal of Quantitative and Qualitative Studies

Author, Year	1	2	3	4	5	6	7	8	9	10	11	YES
(a) Quantitative												0-11 (%)
Portingale et al., 2022	✓	✓	✓	✓	✓	?	✓	✓	✓	✓	✓	10 (90.1%)
Bonilla-Zorita et al., 2023	✓	✓	?	?	✓	✗	✓	✓	✓	?	✓	7 (63.6%)
Hu & Rui, 2023	✓	✓	✓	✗	✓	✓	✓	✓	✓	?	✓	9 (81.2%)
Benjamin & Wang, 2022	✓	✓	✓	✓	✓	?	✓	✓	✓	?	✓	9 (81.2%)
Timmermans et al., 2021	✓	✓	✓	✓	?	✓	✓	✓	✓	?	✓	9 (81.2%)
Barrada & Castro, 2020	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	10 (90.1%)
Azzahro et al., 2018	✓	✓	?	?	✓	✓	✓	✓	✓	?	✓	8 (72.7%)
Cargnino & Lemke, 2023	✓	✓	?	✓	✓	✗	✓	✓	✓	✗	✓	8 (72.7%)
Breslow et al., 2020	✓	✓	?	✓	✓	✓	✓	✓	✓	?	✓	9 (81.2%)
Holtzhausen et al., 2020	✓	✓	✗	✓	✓	?	✓	✓	✓	✗	?	7 (63.6%)
Konings et al., 2023	✓	✓	✗	?	✓	?	✓	✓	✓	✓	✓	8 (72.7%)
Zervoulis et al., 2020	✓	✓	?	✓	✓	?	✓	✓	✓	?	✓	8 (72.7%)
Cao & Smith, 2023	✓	✓	?	✓	✓	?	✓	✓	✓	?	✓	8 (72.7%)
(b) Qualitative												0-10 (%)
Timmermans et al., 2021	✓	✓	✓	✓	✓	?	✓	✓	✓	✓	N/A	9 (90%)
Thomas & Dubar., 2021	✓	✓	✓	✓	✓	✗	?	✓	✓	✓	N/A	8 (80%)
Griffiths & Armstrong, 2024	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	N/A	10 (100%)
Marshall et al., 2023	✓	✓	✓	?	✓	?	✓	✓	✓	✓	N/A	8 (80%)

Note. Response options: yes = ✓; no = ✗; unclear = ?; and not available for checklist = N/A.

Quantitative items: 1. Did the study address a clearly focused issue? 2. Did the authors use an appropriate method to answer their question? 3. Were the subjects recruited in an acceptable way? 4. Were the measures accurately measured to reduce bias? 5. Were the data collected in a way that addressed the research issue? 6. Did the study have enough participants to minimize the play of chance? 7. How are the results presented and what is the main result? 8. Was the data analysis sufficiently rigorous? 9. Is there a clear statement of findings? 10. Can the results be applied to the local population? 11. How valuable is the research? Qualitative items: 1. Was there a clear statement of the aims of the research? 2. Is a qualitative methodology appropriate? 3. Was the research design appropriate to address the aims of the research? 4. Was the recruitment strategy appropriate to the aims of the research? 5. Was the data collected in a way that addressed the research issue? 6. Has the relationship between researcher and participants been adequately considered? 7. Have ethical issues been taken into consideration? 8. Was the data analysis sufficiently rigorous? 9. Is there a clear statement of findings? 10. How valuable is the research?

All selected studies seemed to have had an overall positive quality assessment, with some variety between strengths and weaknesses in each study. For the quantitative studies, the total of positive answers ranged from seven to ten ($M = 8.46$; $Med = 8$; $SD = .93$) out of 11 considered criteria, while the positive answers for the qualitative studies ranged from eight to ten ($M = 8.8$; $Med = 8.5$; $SD = .96$) out of ten. Every study received a positive response for the first two questions, which indicates that all studies had a clear research focus and employed a fitting methodology to answer their respective research questions. Recruitment methods were generally highly reliable, though a few studies lacked clarity in their descriptions, relied on poor recruitment strategies (e.g. snowballing or convenience sampling), or failed to provide sufficient detail about ethical considerations, including participant communication, informed consent, confidentiality, and participant impact. Additionally, some studies omitted statements of how their measures accounted for potential biases. The data analyses were generally sound, and only a few papers showed minor limitations in their sample size (e.g. no proof of statistical power). The least positively rated items across both qualitative and quantitative articles were those that evaluated the generalisability of the general dating population; it was unclear if the majority of article results were generalisable outside of their specific contexts. Overall, the studies demonstrated positive quality assessments, with notable strengths in research clarity, appropriate methodologies, and reliable recruitment methods.

Discussion

This scoping review explored the empirical literature on the relationship between online dating and adult users' well-being. Specifically, it addresses the research question: What is the extent of the empirical literature on the relationship between online dating and adult users' well-being? This question guided the review's systematic approach to identifying, categorising, and analysing studies, with a focus on understanding the diversity of study characteristics, well-being subdimensions, and potential well-being-related outcomes. Overall, the findings pertain to a limited but growing body of seventeen recent peer-reviewed research articles, characterised by a largely positive methodological rigour. The studies depict a stark Western bias and homogeneity in study characteristics such as methodology, study population and examined well-being subdimensions, leaving significant gaps in knowledge. This review found largely non-significant associations apart from some specific usage contexts and demographics, which paints a scenario where online dating use is largely harmless apart from some important contexts. Building on these findings, the discussion explores common trends, implications, research gaps and future directions, followed by an evaluation of this study's strengths and limitations.

First, the systematic screening yielded 17 unique studies which indicates a significant paucity of research surrounding online dating and well-being. Although the screening criteria aimed to capture studies published since 1995, all identified studies were from the last decade. This aligns with the findings of other online dating and mental health researchers, signalling the novelty of this research focus (Bonilla-Zorita et al., 2020). From this review's data, a significant rise in well-being articles could be identified (see Figure 2). This rise parallels increasing concerns about the drawbacks of contemporary digital technology use (Rosen et al., 2013). An explanation can be found in the recent shift towards the inclusion of well-being in mental health and online dating research (Westerhof & Keyes, 2009). A clear sign of this

shift is the concurrent availability of research examining well-being definitions, dimensions, and validated instruments (Iasiello et al., 2024; Keyes, 2002; 2006; 2013).

Second, the studies included in this review focused on a great variety of populations, contexts, and samples. Most studies focused on the general population, but a sizable portion also included specific sexual minority groups. The inclusion of these minority groups is vital to provide a comprehensive understanding of the effects for all demographics. The effects of online dating varied significantly between majority and minority groups, with negative effects predominantly observed in studies focusing on marginalized populations. Furthermore, research on minority groups primarily explored social and emotional well-being, whereas the general population was notably absent from studies addressing the dimension of social well-being. The studies also had sufficient sample sizes, enabling further analyses. Additionally, there is a clear Western bias present in the data as the overwhelming majority of studies are from Western countries. Western, Educated, Industrialized, Rich and Democratic (WEIRD) populations are highly overrepresented in research, which in turn can form serious implications for the generalisability of research outcomes across non-Western contexts (Henrich et al., 2010). This is reinforced by findings describing disparity in dating norms and expectations between Western and Eastern contexts (e.g. more permissive attitudes towards dating in the West) which could in turn affect well-being outcomes (Paul et al., 2021; Tang & Zuo, 2000). Conclusions should therefore be carefully interpreted in larger cultural contexts. Later works can focus on cross-cultural influences on the relationship between online dating and well-being.

Third, the scope was limited in the diversity of research types and methods and examined well-being subdimensions. Most existing well-being studies rely on quantitative and cross-sectional designs, with only a few longitudinal (EMA) studies, and no studies in this scoping review included approaches to address causality. This methodological gap has

significant implications for interpreting the associations reported in Table 4. Without causal evidence, it remains unclear whether online dating platform use influences well-being or whether changes in well-being drive online dating usage. This limitation restricts our understanding of the persistence, causality, and directionality of these associations, which ultimately can lead to misinterpretation of the data, potentially overstating or misconstruing the implications of the findings (Rohrer, 2018). Moreover, only a few articles utilise qualitative methods, employing self-constructed interviews and questionnaires. Having a more thorough qualitative evidence base could support the quantitative findings and provide necessary information about contextual factors in the relationship between online dating and well-being (Agius, 2013). Future research should employ more qualitative, temporal and experimental designs to provide more robust conclusions.

Fourth, a similar scarcity is found when analysing the examined well-being measures. The collective of studies shows evidence of considerable attention to emotional well-being and severely limited focus on psychological and social well-being. Furthermore, more than half of the well-being subdimensions from Bohlmeijer & Westerhof's (2020) 14-dimensional framework, such as autonomy, environmental mastery, and purpose in life, were absent from the online dating literature. While not every dimension directly applies to online dating or seems counterintuitive as a research focus, e.g. environmental mastery, this absence underscores a limited research focus on specific well-being aspects and leaves significant lacunae in our understanding. Additionally, no study gave a holistic view of well-being by employing a validated general well-being instrument like the MHC-SF (Franken et al., 2018; Keyes, 2002). Altogether, the methodological limitations and lack of coverage across well-being subdimensions allow conclusions to be drawn from only a few aspects of well-being that are primarily measured by homogenous methodologies. Future research should expand its focus to form an exhaustive coverage of underexplored well-being subdimensions, such as

autonomy, environmental mastery, personal growth, purpose in life, social acceptance, social actualization, and social contribution, whilst incorporating both general populations as well as minority groups. Additionally, the inclusion of grey literature such as master's theses and dissertations could provide auxiliary evidence and coverage of these underexplored (sub)dimensions, increasing the overall validity.

Fifth, the examined well-being outcomes underscore the nuanced and context-dependent effects of dating app usage on well-being, revealing predominantly non-significant associations in most contexts apart from ghosting and demographics like sexual minority groups. These results largely align with the findings and views from a recent scoping review on online dating and body image, mental health and wellbeing (Bowman et al., 2024), which also emphasized the nuanced and sporadically negative effects of dating app use across different user groups. However, these findings, as well as those in this present scoping review, may be shaped by the types of studies conducted, with some associations potentially biased by studies that primarily focus on negative online dating interactions such as ghosting. Studies emphasising negative experiences inherently skew findings towards more adverse effects. In more detail, the effects on emotional well-being were mostly mixed between non-significant to positive associations that were often contingent on users experiencing gratification in their dating goals. The included qualitative studies support these findings. Psychological outcomes, encompassing the singular domain of self-acceptance, showed no significant associations across all included studies, suggesting that online dating has no significantly measurable impact in this area. Social well-being outcomes were the most polarized and only measured in sexual minority groups. These combined dimensional findings suggest that when effects occur, they tend to be transient and heavily influenced by users' demographic characteristics, motivations, success in achieving dating goals (e.g., finding suitable partners), and self-perception. Different demographics have their own unique set of experiences, motivations and

risk for adverse effects (Sumter & Vandenbosch, 2018). For example, individuals who sex-search or seek self-esteem improvements may be more at risk of compulsive online dating use (Bonilla-zorita et al., 2020). While some users may encounter positive outcomes, such as during the COVID-19 pandemic, these effects seem confined to specific circumstances (Langert et al., 2010; Marshall et al., 2023). Altogether, online dating seems unlikely to meaningfully alter adult users' mental well-being for most populations. However, these findings do not suggest that online dating is without risks for adverse mental health effects. In fact, the results stand in sharp contrast with previous research on mental illness, often considered the other side of the mental health continuum. Studies examining dimensions of mental illness suggest that online dating has a generally strong and positive correlation with a multitude of mental illness dimensions, such as body satisfaction, disordered eating, hypersexuality, depression, and anxiety (Breslow et al., 2020; Castro & Barrada, 2020; Ciocca et al., 2022; Filice et al., 2019; Strubel et al., 2017). Acknowledging this contrast seems essential for a better understanding of the nuanced and heterogeneous effects of online dating on users' mental health.

Strengths and Limitations

The present study has a few significant limitations due to the lack of a research team and time constraints, affecting the breadth and reliability of the findings. This scoping review was conducted by a single researcher who independently performed the search, screening, and analyses. This approach prevents the possibility of independent evaluation and cross-checking at each phase, a limitation that increases susceptibility to potential performance bias and missed relevant papers (Gold et al., 2012). Additionally, there was no certainty on the level of consistency as no measure of interrater reliability was included (Lange, 2010). A future scoping review would benefit from conducting certainty of evidence analyses to assess the

results' reliability. Similar limitations apply to the quality assessment. Altogether, the quality assessment serves as a global perspective on methodological rigour and should be interpreted cautiously. Despite notable limitations, the research demonstrates high replicability due to in-depth process descriptions and is carried out systematically. Greatly adhering to scoping review guidelines and advised reporting, raising the overall quality (Arksey and O'Malley, 2005; Levac et al., 2010). Crucially, this review provides meaningful insights into the impact of online dating on adult user well-being, identifying important research gaps in this relevant field. It does so by utilising suitable research methods, employing a scoping review with quality assessment, and grounding its analyses in a validated framework of well-being dimensions and subdimensions.

Conclusion

This scoping review provided evidence regarding the extent of research concerning the relationship between online dating and adult users' well-being. This study was the first to follow a theoretically grounded well-being conceptualisation to analyse this relationship and revealed how its dimensions, emotional, psychological and social well-being, are affected in normative non-deviant online dating usage cases. The research identified a limited base of evidence surrounding online dating and well-being. This base displays a significant Western bias, exhibits high methodological rigour, and utilises validated instruments to examine a multitude of well-being subdimensions, leaving many social and psychological well-being subdimensions underrepresented. Most associations between online dating and emotional well-being appear to be largely non-significant or mixed. This hints that, for the general population, online dating may have minimal or neutral impacts on well-being, while outcomes tend to be more pronounced for marginalised groups.

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Acknowledgements

I would like to thank Dr. J. Piano Simoes for his invaluable feedback during this project. My thanks to the professors at the psychology department of the university of Twente for their assistance and personal attention. Finally, I am grateful for my family and friends for the love and support they gave me during these often-stressful times.

Funding and Conflict of Interest

The author has no financial interest or conflicts of interest to disclose and declares that this study has not received any external funding.

PRISMA-ScR- Checklist, Tricco et al. (2018)

SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
TITLE			
Title	1	Identify the report as a scoping review.	1
ABSTRACT			
Structured summary	2	Provide a structured summary that includes (as applicable): background, objectives, eligibility criteria, sources of evidence, charting methods, results, and conclusions that relate to the review questions and objectives.	2
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of what is already known. Explain why the review questions/objectives lend themselves to a scoping review approach.	3-7
Objectives	4	Provide an explicit statement of the questions and objectives being addressed with reference to their key elements (e.g., population or participants, concepts, and context) or other relevant key elements used to conceptualize the review questions and/or objectives.	7
METHODS			
Protocol and registration	5	Indicate whether a review protocol exists; state if and where it can be accessed (e.g., a Web address); and if available, provide registration information, including the registration number.	8
Eligibility criteria	6	Specify characteristics of the sources of evidence used as eligibility criteria (e.g., years considered, language, and publication status), and provide a rationale.	10
Information sources*	7	Describe all information sources in the search (e.g., databases with dates of coverage and contact with authors to identify additional sources), as well as the date the most recent search was executed.	8-9
Search	8	Present the full electronic search strategy for at least 1 database, including any limits used, such that it could be repeated.	10
Selection of sources of evidence†	9	State the process for selecting sources of evidence (i.e., screening and eligibility) included in the scoping review.	11-12
Data charting process‡	10	Describe the methods of charting data from the included sources of evidence (e.g., calibrated forms or forms that have been tested by the team before their use, and whether data charting was done independently or in duplicate) and any processes for obtaining and confirming data from investigators.	11-12
Data items	11	List and define all variables for which data were sought and any assumptions and simplifications made.	11-12
Critical appraisal of individual sources of evidence§	12	If done, provide a rationale for conducting a critical appraisal of included sources of evidence; describe the methods used and how this information was used in any data synthesis (if appropriate).	11-12
Synthesis of results	13	Describe the methods of handling and summarizing the data that were charted.	11
RESULTS			
Selection of sources of evidence	14	Give numbers of sources of evidence screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally using a flow diagram.	13-14
Characteristics of sources of evidence	15	For each source of evidence, present characteristics for which data were charted and provide the citations.	14-22
Critical appraisal within sources of evidence	16	If done, present data on critical appraisal of included sources of evidence (see item 12).	22-23
Results of individual sources of evidence	17	For each included source of evidence, present the relevant data that were charted that relate to the review questions and objectives.	14-22
Synthesis of results	18	Summarize and/or present the charting results as they relate to the review questions and objectives.	14-22
DISCUSSION			
Summary of evidence	19	Summarize the main results (including an overview of concepts, themes, and types of evidence available), link to the review questions and objectives, and consider the relevance to key groups.	24-28
Limitations	20	Discuss the limitations of the scoping review process.	28-29

SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
Conclusions	21	Provide a general interpretation of the results with respect to the review questions and objectives, as well as potential implications and/or next steps.	29
FUNDING			
Funding	22	Describe sources of funding for the included sources of evidence, as well as sources of funding for the scoping review. Describe the role of the funders of the scoping review.	40

JB1 = Joanna Briggs Institute; PRISMA-ScR = Preferred Reporting Items for Systematic reviews and Meta-Analyses

extension for Scoping Reviews. * Where sources of evidence (see second footnote) are compiled from, such as bibliographic databases, social media platforms, and Web sites. † A more inclusive/heterogeneous term used to account for the different types of evidence or data sources (e.g., quantitative and/or qualitative research, expert opinion, and policy documents) that may be eligible in a scoping review as opposed to only studies. This is not to be confused with information sources (see first footnote). ‡ The frameworks by Arksey and O'Malley (6) and Levac and colleagues (7) and the JBI guidance (4, 5) refer to the process of data extraction in a scoping review as data charting. § The process of systematically examining research evidence to assess its validity, results, and relevance before using it to inform a decision. This term is used for items 12 and 19 instead of "risk of bias" (which is more applicable to systematic reviews of interventions) to include and acknowledge the various sources of evidence that may be used in a scoping review (e.g., quantitative and/or qualitative research, expert opinion, and policy document).

Appendix B**Adapted Covidence Extraction Form****Study ID:****Title:****Author(s):****Year:****Country in which the study conducted:****Aim of study:****Study design:**

- | | |
|-----|-----------------------------------|
| 1. | Randomised controlled trial |
| 2. | Non-randomised experimental study |
| 3. | Cohort study |
| 4. | Cross sectional study |
| 5. | Case control study |
| 6. | Systematic review |
| 7. | Qualitative research |
| 8. | Prevalence study |
| 9. | Case series |
| 10. | Case report |
| 11. | Diagnostic test accuracy study |
| 12. | Clinical prediction rule |
| 13. | Economic evaluation |
| 14. | Text and opinion |
| 15. | Other |

Population description:**Total number of participants:****Well-being instrument(s) used + acronym:****Well-being outcome/domain:****Dating app(s):****Key findings**

Appendix C

CASP Checklists - (Critical Appraisal Skills Programme, 2018a; 2018b)

Cross sectional studies	
Section A: Are the results valid?	
1. Did the study address a clearly focused issue?	Yes No Can't Tell
CONSIDER: <i>A question can be 'focused' in terms of</i> - the population studied - the risk factors studied - is it clear whether the study tried to detect a beneficial or harmful effect - the outcomes considered	
2. Did the authors use an appropriate method to answer their question?	Yes No Can't Tell
CONSIDER: - Is a descriptive/cross-sectional study an appropriate way of answering the question - did it address the study question	
3. Were the subjects recruited in an acceptable way?	Yes No Can't Tell
CONSIDER: <i>We are looking for selection bias which might compromise the generalisability of the findings:</i> - Was the sample representative of a defined population - Was everybody included who should have been included	
4. Were the measures accurately measured to reduce bias?	Yes No Can't Tell
CONSIDER: <i>Look for measurement or classification bias:</i> - did they use subjective or objective measurements - do the measurements truly reflect what you want them to (have they been validated)	
5. Were the data collected in a way that addressed the research issue?	Yes No Can't Tell
CONSIDER: - if the setting for data collection was justified - if it is clear how data were collected (e.g., interview, questionnaire, chart review) - if the researcher has justified the methods chosen - if the researcher has made the methods explicit (e.g. for interview method, is there an indication of how interviews were conducted?)	
6. Did the study have enough participants to minimise the play of chance?	Yes No Can't Tell
CONSIDER: - if the result is precise enough to make a decision - if there is a power calculation. This will estimate how many subjects are needed to produce a reliable estimate of the measure(s) of interest.	
7. How are the results presented and what is the main result?	Yes No Can't Tell
CONSIDER: - if, for example, the results are presented as a proportion of people experiencing an outcome, such as risks, or as a measurement, such as mean or median differences, or as survival curves and hazards - how large this size of result is and how meaningful it is - how you would sum up the bottom-line result of the trial in one sentence	
8. Was the data analysis sufficiently rigorous?	Yes No Can't Tell
CONSIDER: - if there is an in-depth description of the analysis process - if sufficient data are presented to support the findings	
9. Is there a clear statement of findings?	Yes No Can't Tell

CONSIDER: • <i>if the findings are explicit</i> • <i>if there is adequate discussion of the evidence both for and against the researchers' arguments</i> • <i>if the researchers have discussed the credibility of their findings</i> • <i>if the findings are discussed in relation to the original research questions</i>		
10.	Can the results be applied to the local population?	Yes No Can't Tell
CONSIDER: • <i>the subjects covered in the study could be sufficiently different from your population to cause concern.</i> • <i>your local setting is likely to differ much from that of the study</i>		
11.	How valuable is the research?	Yes No Can't Tell
CONSIDER: • <i>one descriptive/cross-sectional study rarely provides sufficiently robust evidence to recommend changes to clinical practice or within health policy decision making</i> • <i>if the researcher discusses the contribution the study makes to existing knowledge (e.g., do they consider the findings in relation to current practice or policy, or relevant research-based literature?)</i> • <i>if the researchers have discussed whether or how the findings can be transferred to other populations</i>		

APPRAISAL SUMMARY: List key points from your critical appraisal that need to be considered when assessing the validity of the results and their usefulness in decision-making.

Positive/Methodologically sound	Negative/Relatively poor methodology	Unknowns

Qualitative studies Section A Are the results valid?		
1.	Was there a clear statement of the aims of the research?	Yes No Can't Tell
CONSIDER: • <i>what was the goal of the research?</i> • <i>why was it thought important?</i> • <i>its relevance</i>		
2.	Is a qualitative methodology appropriate?	Yes No Can't Tell
CONSIDER: • <i>If the research seeks to interpret or illuminate the actions and/or subjective experiences of research participants</i> • <i>Is qualitative research the right methodology for addressing the research goal?</i>		
3.	Was the research design appropriate to address the aims of the research?	Yes No Can't Tell
CONSIDER: • <i>if the researcher has justified the research design (e.g., have they discussed how they decided which method to use)</i>		
4.	Was the recruitment strategy appropriate to the aims of the research?	Yes No Can't Tell
CONSIDER: • <i>If the researcher has explained how the participants were selected</i> • <i>If they explained why the participants they selected were the most appropriate to provide access to the type of knowledge sought by the study</i> • <i>If there are any discussions around recruitment (e.g. why some people chose not to take part)</i>		
5.	Was the data collected in a way that addressed the research issue?	Yes No Can't Tell
CONSIDER: • <i>If the setting for the data collection was justified</i> • <i>If it is clear how data were collected (e.g. focus group, semi-structured interview etc.)</i> • <i>If the researcher has justified the methods chosen</i>		

• If the researcher has made the methods explicit (e.g. for interview method, is there an indication of how interviews are conducted, or did they use a topic guide) • If methods were modified during the study. If so, has the researcher explained how and why • If the form of data is clear (e.g. tape recordings, video material, notes etc.) • If the researcher has discussed saturation of data		
6.	Has the relationship between researcher and participants been adequately considered?	Yes No Can't Tell
CONSIDER: • If the researcher critically examined their own role, potential bias and influence during (a) formulation of the research questions (b) data collection, including sample recruitment and choice of location • How the researcher responded to events during the study and whether they considered the implications of any changes in the research design		
Section B: What are the results?		
7.	Have ethical issues been taken into consideration?	Yes No Can't Tell
CONSIDER: • If there are sufficient details of how the research was explained to participants for the reader to assess whether ethical standards were maintained • If the researcher has discussed issues raised by the study (e.g. issues around informed consent or confidentiality or how they have handled the effects of the study on the participants during and after the study) • If approval has been sought from the ethics committee		
8.	Was the data analysis sufficiently rigorous?	Yes No Can't Tell
CONSIDER: • If there is an in-depth description of the analysis process • If thematic analysis is used. If so, is it clear how the categories/themes were derived from the data • Whether the researcher explains how the data presented were selected from the original sample to demonstrate the analysis process • If sufficient data are presented to support the findings • To what extent contradictory data are taken into account • Whether the researcher critically examined their own role, potential bias and influence during analysis and selection of data for presentation		
9.	Is there a clear statement of findings?	Yes No Can't Tell
CONSIDER: • If the findings are explicit • If there is adequate discussion of the evidence both for and against the researcher's arguments • If the researcher has discussed the credibility of their findings (e.g. triangulation, respondent validation, more than one analyst) • If the findings are discussed in relation to the original research question		
Section C: Will the results help locally?		
10.	How valuable is the research?	Yes No Can't Tell
CONSIDER: • If the researcher discusses the contribution the study makes to existing knowledge or understanding (e.g., do they consider the findings in relation to current practice or policy, or relevant research-based literature) • If they identify new areas where research is necessary • If the researchers have discussed whether or how the findings can be transferred to other populations or considered other ways the research may be used		

APPRAISAL SUMMARY: List key points from your critical appraisal that need to be considered when assessing the validity of the results and their usefulness in decision-making.

Positive/Methodologically sound	Negative/Relatively poor methodology	Unknowns