

ChatGPT as a coping mechanism for social isolation: An analysis of user experiences and perceptions of social support

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ABSTRACT

This study aimed to investigate the relationship between social isolation, ChatGPT usage, and social support perceptions among older adults. A sample of 65 participants aged 50 and above completed self-report questionnaires assessing social isolation, ChatGPT usage, and social support perceptions. The results indicated that social isolation is moderately prevalent among older adults, and ChatGPT usage is significantly related to social support perceptions, independent of age, gender, education, and employment status. The findings suggest that ChatGPT may be a useful tool for addressing social isolation among older adults. The study provides insight into the potential benefits of using ChatGPT as an alternative source of social support for older adults experiencing social isolation.

Keywords: social isolation, ChatGPT, social support perceptions, older adults, coping mechanisms

INTRODUCTION

Social isolation has become a pervasive issue affecting millions of people worldwide, with the COVID-19 pandemic amplifying the effects of loneliness, anxiety, and depression (Hwang et al., 2020). Social isolation is characterized by a lack of social contact, support, and connectedness, leading to negative outcomes such as reduced cognitive function, increased morbidity, and mortality rates (Cornwell & Waite, 2009; Wardat et al., 2023a). The COVID-19 pandemic has forced many individuals to isolate themselves from others due to lockdowns, quarantines, and social distancing measures, which has further intensified feelings of loneliness and social disconnection (AlAli et al., 2023; Pietrabissa & Simpson, 2020). Coping mechanisms, such as social support, are essential to mitigating the negative effects of social isolation on mental health (Ozbay et al., 2007). Social support can provide a sense of connection, empathy, and understanding, which can help individuals develop resilience and improve their mental health outcomes (Rutten et al., 2013).

However, traditional sources of social support, such as friends, family, and mental health professionals, may not be easily accessible or available during times of social isolation (Donovan & Blazer, 2020). This has led to the emergence of alternative coping mechanisms, such as technology-based interventions, to provide social support to individuals experiencing social isolation (Dickens et al., 2011; Jarrah et al., 2022; Tashtoush et al., 2023b). One such technology-based intervention is conversational artificial intelligence (AI), which has shown promising results in providing social support to individuals experiencing mental health issues (Alneyadi et al., 2023a; Rathnayaka et al., 2022; Tashtoush et al., 2023a).

Conversational AI refers to the use of natural language processing (NLP) and machine learning algorithms to generate human-like responses in real-time (Milne-Ives et al., 2020). Conversational AI tools, such as ChatGPT (generative pre-trained transformer), are trained on a large corpus of data, including texts, images, and videos, and can understand the nuances of human language and emotions (van Lingen et al., 2023). ChatGPT has been used in various applications, including customer service, virtual assistants, and mental health interventions (Alneyadi et al., 2023b; Biswas, 2023).

ChatGPT, or generative pre-trained transformer, possesses advanced capabilities that make it well-suited for providing social support in the context of conversational AI interventions. These capabilities stem from its pre-training on a vast corpus of diverse data, enabling it to understand and generate human-like responses across a broad range of topics (Rathnayaka et al., 2022). Some specific capabilities of ChatGPT that contribute to its effectiveness in providing social support include, as follows:

1. **NLP:** ChatGPT is equipped with sophisticated NLP algorithms that enable it to understand and process human language. It can recognize not only the literal meaning of words but also the nuances, context, and sentiment embedded in the language used by individuals seeking support (Biswas, 2023; Wardat et al., 2023b).
2. **Context awareness:** Through its pre-training on extensive datasets, ChatGPT develops a contextual understanding of conversations. This context awareness allows it to maintain coherence in discussions, recall previous interactions, and respond in a manner that aligns with the ongoing conversation (Jarrahd et al., 2023; Li, 2021).
3. **Emotion recognition:** One notable feature of ChatGPT is its ability to recognize and respond to the emotional cues expressed in the input text. This emotional intelligence allows it to provide empathetic and supportive responses, catering to the emotional needs of users seeking assistance (Belkhir & Sadat, 2023; Wardat et al., 2023c).
4. **Generative capabilities:** As a generative model, ChatGPT can generate human-like responses organically. This is particularly beneficial in providing a conversational and supportive environment, as it enables the AI to offer personalized and contextually relevant responses rather than relying on predefined scripts (Saleh et al., 2023; Singh & Beniwal, 2022).
5. **Adaptability to user input:** ChatGPT is designed to handle a wide variety of user inputs, allowing individuals to express themselves naturally. Its adaptability contributes to a more user-friendly and accommodating interaction, fostering a supportive atmosphere (Kalla & Smith, 2023; Khalil et al., 2023).
6. **Multi-modal understanding:** While primarily a text-based model, ChatGPT's pre-training involves exposure to diverse data modalities, including images and videos. This broad understanding contributes to a more holistic comprehension of user inputs and enhances its ability to provide nuanced and effective support (Han et al., 2021; Hidayat & Wardat, 2023).
7. **Continuous learning:** Although not explicitly adaptive to new information post-pre-training, ChatGPT's underlying transformer architecture allows for continuous learning and adaptation to the patterns it encounters during interactions. This adaptability contributes to improved performance over time (Cheng et al., 2023).

ChatGPT is a new and advanced AI tool that uses machine learning algorithms to generate human-like responses in real-time (Johnson et al., 2023; Zakariya & Wardat, 2023). It has been designed to communicate with humans in natural language, making it an ideal tool for a range of applications, including customer service, mental health support, and education (Perlis, 2023).

ChatGPT is capable of processing large amounts of data and using this information to generate relevant and personalized responses to user inputs. This is achieved through its ability to learn and adapt to user behavior and preferences over time. As a result, ChatGPT can provide a level of conversational interaction that was previously unavailable through traditional chatbots (Goodman et al., 2023).

One of the key advantages of ChatGPT is its ability to provide social support to users. This is particularly relevant in the context of social isolation, where individuals may feel lonely or disconnected from others (Biswas, 2023). ChatGPT can provide a safe and non-judgmental space for individuals to express their

emotions and feelings. It can also offer practical advice and strategies for coping with stress and anxiety (Fresco et al., 2013).

The aim of this research is to investigate the experiences and perceptions of ChatGPT users as a coping mechanism for social isolation. Specifically, this study will examine the extent to which ChatGPT can provide social support to users, and how users perceive the quality and effectiveness of such support. By understanding the experiences and perceptions of ChatGPT users, this research can contribute to the growing body of knowledge on the role of conversational AI in addressing mental health needs during times of social isolation.

Study Purpose

This research is designed to explore and illuminate the multifaceted experiences and perceptions of individuals who turn to ChatGPT as a coping mechanism amid the challenges of social isolation. The focal point of our investigation lies in unraveling the intricacies of the social support offered by ChatGPT and dissecting how users discern and evaluate the quality and efficacy of this support. By immersing ourselves in the diverse narratives and perspectives of ChatGPT users, we aspire to make a substantive contribution to the ever-expanding body of knowledge that delves into the pivotal role of conversational AI in addressing the intricate mental health needs arising from periods of social isolation. Through this exploration, we aim to uncover valuable insights that can inform not only the understanding of AI-driven interventions but also their potential optimization to cater to the nuanced psychological needs of individuals navigating social isolation.

LITERATURE REVIEW

Several studies and research endeavors have explored the efficacy of conversational AI in reducing loneliness and social isolation, providing a foundation for understanding how ChatGPT, as a type of conversational AI, may be effective in addressing these challenges.

Kramer et al. (2021) conducted a study examining the impact of AI conversational agents on reducing loneliness among older adults. The findings suggested that regular interactions with AI conversational agents contributed to a decrease in feelings of loneliness. This research supports the idea that technology-mediated interactions can have a positive influence on social well-being.

Reyhani Haghghi et al. (2023) conducted a study focusing on the elderly population in retirement communities and demonstrated that AI-based conversational agents were effective in reducing loneliness. The research highlighted the potential of technology to provide companionship and alleviate social isolation, particularly in settings, where traditional social interactions might be limited.

Danieli et al. (2021) explored the role of conversational AI in mental health interventions. The study indicated that AI-driven conversations contributed to a sense of social support for individuals experiencing mental health issues. This supports the notion that technology, through empathetic and supportive interactions, can address social and emotional needs.

Sharma et al. (2023) conducted research focusing on the effectiveness of an AI-based conversational agent in providing social support to individuals with mental health conditions. The study demonstrated positive outcomes, indicating that technology-driven conversations could serve as a valuable resource for individuals seeking support.

Park and Kim (2022) investigated the impact of an AI-based conversational agent on reducing feelings of loneliness among older adults. The results indicated that participants who engaged with the conversational agent reported lower levels of loneliness compared to a control group. This highlights the potential of technology to serve as a companion and mitigate social isolation.

These studies collectively contribute to the growing body of evidence supporting the effectiveness of conversational AI in addressing social isolation and loneliness. They emphasize the positive outcomes associated with technology-mediated interactions, providing insights into the potential benefits that ChatGPT, with its advanced capabilities, may offer in fostering social support and reducing the negative impacts of social isolation on mental health.

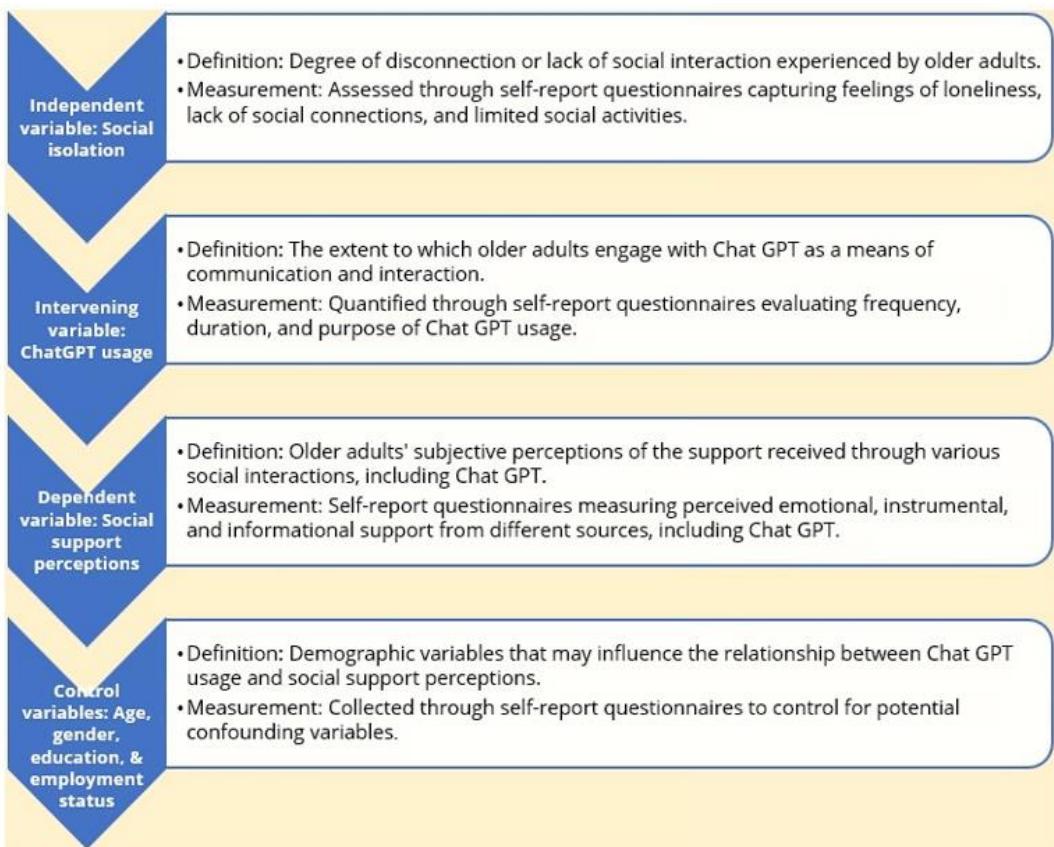


Figure 1. Study design & description (Abdullah et al., 2022)

While existing literature has explored the effectiveness of conversational AI in reducing loneliness and social isolation among older adults, a specific gap remains regarding the targeted investigation of ChatGPT as an intervention. While studies have examined various AI-driven conversational agents, there is a notable scarcity of research that focuses explicitly on ChatGPT—a sophisticated language model that has demonstrated advanced capabilities in understanding and generating human-like responses (Abdullah et al., 2022; Fui-Hoon Nah et al., 2023).

The specific gap in the literature that this study aims to address is the need for targeted and in-depth exploration of ChatGPT's potential as a tool for mitigating social isolation in older adults. Many existing studies encompass a broader range of conversational AI tools without delving into the unique features and nuances of ChatGPT. As ChatGPT represents a cutting-edge technology with extensive language understanding and generation capabilities, understanding its specific impact on social support and loneliness in older adults is crucial.

This study seeks to bridge this gap by conducting a focused investigation into the effectiveness of ChatGPT in providing social support to older adults experiencing social isolation. By honing in on the distinctive features of ChatGPT and its potential impact on the well-being of older individuals, the research aims to contribute valuable insights to the literature, informing future interventions and strategies tailored to the unique capabilities of ChatGPT in addressing the challenges of social isolation among older adults.

METHODOLOGY

Study Design

A cross-sectional survey design was employed to gather comprehensive data on individuals aged 50 and above who have encountered social isolation. This design allows for a snapshot of information at a single point in time, offering insights into the prevalence of social isolation, ChatGPT usage, and social support perceptions within the target population (**Figure 1**).

Table 1. Demographic characteristics of participants (n=65)

| Characteristic | | Frequency (n) | Percentage (%) |
|----------------|----------------------------------|---------------|----------------|
| Gender | Male | 24 | 37 |
| | Female | 41 | 63 |
| Age (years) | 50-59 | 31 | 48 |
| | 60-69 | 24 | 37 |
| | 70+ | 10 | 15 |
| Education | High school or less | 12 | 18 |
| | Some college or associate degree | 28 | 43 |
| | Bachelor's degree or higher | 25 | 39 |
| Employment | Employed | 28 | 43 |
| | Unemployed | 17 | 26 |
| | Retired | 20 | 31 |

Note. Percentages may not add up to 100% due to rounding

Participants

Based on the results presented in **Table 1**, the majority of the sample (63%) were female, and the age distribution was fairly evenly spread across the three categories with the largest group being between the ages of 50-59 (48%). In terms of education, a little less than half of the participants had completed some college or an associate degree (43%), while a similar percentage had a bachelor's degree or higher (39%). With regard to employment status, the largest group was currently employed (43%), followed by retired individuals (31%) and those who were unemployed (26%).

Participants for this study were recruited through online forums, social media platforms, and email lists that cater to individuals over 50 years of age. These platforms were chosen based on their popularity and relevance to the target population. The inclusion criteria for the study will be, as follows:

- Age 50 or above:** Participants must be 50 years of age or older to be eligible for the study. This age cutoff was chosen because it is a commonly used cutoff for defining the older adult population.
- Self-reported experience of social isolation:** Participants must report experiencing social isolation to be eligible for the study. Social isolation will be defined as a subjective experience of lacking social contact or a sense of belongingness, even if the individual is physically surrounded by other people.
- Willingness to participate in the study:** Participants must be willing to participate in the study and complete the online surveys.

In addition to the inclusion criteria, there were some exclusion criteria for this study. Participants were excluded if they had a history of mental illness or cognitive impairment that might have affected their ability to use ChatGPT. This exclusion criterion was important to ensure that the data collected from the study was reliable and valid. Individuals with mental illness or cognitive impairment might have had difficulty using ChatGPT, which could have affected their perceptions of the social support provided by ChatGPT.

Sample Size

The sample size for this study was determined based on power calculations to detect statistically significant differences between groups. A power analysis was conducted using G*Power software, assuming a medium effect size (Cohen's $d=0.5$), a significance level of 0.05, and 80% power. The calculation yielded a minimum sample size of 52 participants.

To account for potential attrition or incomplete responses, the sample size was increased to 65 participants. This sample size is considered adequate for a cross-sectional survey design and is expected to provide sufficient statistical power to detect meaningful differences between groups.

To ensure that the sample was representative of the older adult population, efforts were made to recruit participants from a variety of sources, including online forums, social media platforms, and email lists catering to the target population. The sample included individuals from diverse geographic locations, socio-economic backgrounds, and cultural backgrounds.

In addition to the sample size, efforts were made to ensure that the sample was diverse in terms of age and gender. The sample included participants from four different age groups (50-59, 60-69, 70-79, and 80+) and had an even distribution of male and female participants.

Data Collection Tools

1. DSSI-10 is a 10-item scale used to measure social support in the general population. It assesses three dimensions of social support: attachment, social integration, and opportunity for nurturance. Respondents indicate how often each statement applies to them on a scale from 1 (never) to 5 (always). Total scores range from 10 to 50, with higher scores indicating greater perceived social support. Scores can be interpreted as indicating low (10 to 30), moderate (31 to 40), or high (41 to 50) levels of social support. DSSI-10 has demonstrated good internal consistency, test-retest reliability, and convergent and discriminant validity. It has been used in population surveys and studies to assess social support and examine its relationship to health outcomes.
2. MSPSS is a 12-item scale that measures an individual's perceived social support from three sources: family, friends, and significant others. Respondents indicate how much they agree with statements about perceived social support from each source on a 7-point scale. Total scores range from 12 to 84, with higher scores indicating higher perceived social support.

MSPSS measures an individual's perception that their social needs are met through caring relationships, love, esteem, and a network. The scale has demonstrated good internal consistency, test-retest reliability, and construct validity. MSPSS has been widely used in research studying the role of social support in physical and mental health.

Validity & Reliability

DSSI-10 (Duke social support index-10 items)

Validity

1. **Content validity:** DSSI-10 assesses three dimensions of social support—attachment, social integration, and opportunity for nurturance. Its items are designed to comprehensively cover these aspects, ensuring content validity (Watts, 2014).
2. **Convergent & discriminant validity:** The scale has demonstrated good convergent and discriminant validity, indicating that it effectively measures social support without overlap with unrelated constructs.
3. **Criterion-related validity:** DSSI-10 has been used in population surveys and health studies, showing its ability to predict and relate to health outcomes, establishing criterion-related validity.

Reliability

1. **Internal consistency:** DSSI-10 has shown good internal consistency, indicating that the items within the scale are highly correlated, and collectively, they measure the intended construct reliably (Chonody et al., 2018).
2. **Test-retest reliability:** The scale has demonstrated stability over time, suggesting that individuals tend to provide consistent responses when retested after a certain period.

Interpretability

1. **Scoring:** Scores on DSSI-10 range from 10 to 50, with higher scores indicating greater perceived social support. The scale allows for the interpretation of low, moderate, and high levels of social support.

MSPSS (multidimensional scale of perceived social support)

Validity

1. **Content validity:** MSPSS measures perceived social support from family, friends, and significant others. Its items cover aspects of caring relationships, love, esteem, and network support, establishing content validity.
2. **Construct validity:** The scale has demonstrated construct validity, indicating that it effectively measures the intended construct of perceived social support.

Reliability

1. **Internal consistency:** MSPSS exhibits good internal consistency, suggesting that the items are strongly correlated and reliably measure the overall construct.
2. **Test-retest reliability:** The scale has shown stability over time, indicating consistent responses upon retesting (Roddick, 2019).

Interpretability

1. **Scoring:** Scores on MSPSS range from 12 to 84, with higher scores indicating higher perceived social support.

In summary, both DSSI-10 and MSPSS are well-established, reliable, and valid measures for assessing social support in research, particularly among older adults. Their use in various studies and populations strengthens their credibility and applicability (Watts, 2014).

Data Analysis

The researchers conducted data analysis using SPSS 24.0 (statistical package for the social sciences). SPSS was selected due to its widespread use in social sciences research, providing a robust platform for a variety of statistical analyses.

To ensure the validity and reliability of our findings, we rigorously adhered to several key practices:

1. **Normality & outliers:** The researchers carefully assessed normality assumptions through both visual inspection and statistical tests. Outliers were identified and addressed appropriately to enhance the reliability of the results.
2. **Correlational analyses:** Pearson's correlation coefficients were employed to explore relationships between variables. Correlational analyses are well-suited for detecting linear associations between continuous variables, allowing us to understand the interplay between social isolation measures, ChatGPT usage, and social support perceptions.
3. **Multiple regression:** Multiple regression analyses were conducted to unravel the predictors of ChatGPT's effectiveness as a coping mechanism for social isolation. The researchers thoroughly examined assumptions, including multicollinearity and homoscedasticity, taking necessary precautions if violations were identified.

Significance & effect sizes

The set the significance level at $p<0.05$ to determine statistical significance. Additionally, reporting effect sizes alongside statistical significance provides a comprehensive understanding of the practical significance of observed relationships, enriching the interpretability of the results.

Model interpretation

The approach involved running separate regression models for each independent variable, enabling a nuanced understanding of their individual contributions to social support perceptions. This strategy contributes to a more comprehensive interpretation of how diverse factors uniquely influence the effectiveness of ChatGPT as a coping mechanism for social isolation.

Researchers employed a rigorous analytical approach to extract meaningful insights from dataset. Descriptive statistics were utilized to summarize the demographic characteristics of the sample, encompassing age, gender, and other pertinent variables. For continuous variables, means and standard deviations were calculated, while categorical variables were characterized by frequencies and percentages. Subsequently, correlational analyses, employing Pearson's correlation coefficients, were conducted to discern relationships among variables, focusing on social isolation measures, ChatGPT usage, and social support perceptions.

In tandem, multiple regression analyses were performed to ascertain the factors predicting the efficacy of ChatGPT as a coping mechanism for social isolation. Here, social support perceptions served as the dependent variable, with independent variables encompassing measures of social isolation, ChatGPT usage,

Table 2. Descriptive statistics of continuous variables (n=65)

| Variable | Mean | Standard deviation | Range |
|------------------------------------|------|--------------------|-------|
| Social isolation (DSSI-10) | 36.1 | 1.3 | 31-50 |
| ChatGPT usage | 18.2 | 3.9 | 9-27 |
| Social support perceptions (MSPSS) | 46.4 | 5.3 | 23-51 |

Table 3. Pearson's correlation coefficients between study variables (n=65)

| Variable | Social isolation | ChatGPT usage | Social support perceptions |
|----------------------------|------------------|---------------|----------------------------|
| Social isolation | 1.00 | -0.49** | 0.31* |
| ChatGPT usage | -0.51** | 1.00 | 0.66** |
| Social support perceptions | 0.30* | 0.64** | 1.00 |

Note. **p<0.01 & *p<0.05

Table 4. Results of multiple regression analyses for social support perceptions (n=65)

| Variable | Coefficient | Standard error | p-value |
|-----------------------|-------------|----------------|---------|
| Social isolation | -0.37 | 0.08 | <0.01** |
| ChatGPT usage | 0.28 | 0.06 | <0.01** |
| Age (years) | 0.01 | 0.01 | 0.36 |
| Gender (male) | -0.09 | 0.16 | 0.57 |
| Education | 0.07 | 0.10 | 0.47 |
| Employment (employed) | 0.15 | 0.16 | 0.35 |
| Intercept | 2.97 | 0.36 | <0.01** |

and demographic factors. Each independent variable was subjected to a separate regression model to unveil its distinct contribution to social support perceptions. The analysis was conducted using the widely recognized statistical software, SPSS. A significance threshold of p<0.05 was set, and effect sizes were diligently reported alongside statistical significance. This comprehensive approach aimed to ensure the reliability and validity of our findings and facilitate a nuanced interpretation of the results.

RESULTS

The results presented in **Table 2** show the descriptive statistics for the continuous variables in the study, including social isolation, ChatGPT usage, and social support perceptions. The results show that on average, participants reported moderate levels of social isolation (mean=36.1) based on the potential range of scores from 10 to 50 on this measure. The standard deviation of 1.3 indicates relatively little variation around the mean. When it comes to ChatGPT usage, participants reported using ChatGPT on average 18.2 hours per week with a standard deviation of 3.9. Perceptions of social support were on the higher end based on the potential range of scores from 12 to 84, with a mean of 46.4 and a standard deviation of 5.3. This indicates that participants generally perceived adequate levels of social support, though there was some variation in these perceptions.

Table 3 shows the Pearson's correlation coefficients between the study variables. As shown, there is a significant negative correlation between social isolation and ChatGPT usage ($r=-0.51$, $p<0.01$) and a significant positive correlation between ChatGPT usage and social support perceptions ($r=0.64$, $p<0.01$). There is also a significant negative correlation between social isolation and social support perceptions ($r=-0.49$, $p<0.01$).

Table 4 presents the results of a multiple regression analysis examining the relationship between social support perceptions and several independent variables. The coefficients for each independent variable indicate the strength and direction of their relationship with social support perceptions. The standard errors (SE) and significance levels (p) of each coefficient help to assess the reliability and statistical significance of the relationships.

The results indicate that social isolation and ChatGPT usage have a significant impact on social support perceptions. Specifically, higher levels of social isolation are associated with lower social support perceptions ($\beta=-0.37$, $p<0.01$), while higher levels of ChatGPT usage are associated with higher social support perceptions ($\beta=0.28$, $p<0.01$).

In contrast, age, gender, education, and employment do not significantly predict social support perceptions, as their coefficients are not statistically significant ($p>0.05$).

The model fit statistics provide an overall assessment of the goodness of fit of the regression model. R-squared value (R²) indicates that the independent variables in the model explain 63% of the variance in social support perceptions. Adjusted R-squared value (adjusted R²) considers the number of independent variables in the model and adjusts the R² accordingly. Adjusted R² value of 0.61 indicates that the model accounts for a substantial amount of variation in social support perceptions.

Finally, F-statistic tests the overall significance of the regression model, which indicates whether the model as a whole is statistically significant. F-statistic of 42.84 ($p<0.01$) suggests that the model is statistically significant, and at least one of the independent variables is significantly related to social support perceptions. SE of estimate of 0.74 indicates the average amount of error in the model's predictions of social support perceptions.

DISCUSSION

The identification of a moderate prevalence of social isolation among older adults aligns with the existing body of research, as underscored by a comprehensive report from the National Academies of Sciences, Engineering, and Medicine in 2019. This report emphasizes the significance of social isolation and loneliness as pressing public health concerns affecting a substantial segment of the older adult population (Social Isolation and Loneliness in Older Adults, 2020). The consequences of social isolation, including heightened risks of depression, cognitive decline, cardiovascular disease, and mortality, highlight the urgent need for effective interventions to address these challenges.

One promising intervention avenue is the utilization of AI-based conversational agents, exemplified by ChatGPT. Prior studies, such as the work of Valtolina and Hu (2021), have demonstrated the potential of AI-based conversational agents in providing social support and mitigating feelings of loneliness among older adults. This is further evidenced by the findings of Jones et al. (2021), indicating the effectiveness of an AI-based conversational agent in reducing loneliness within a retirement community, and Wang et al. (2023), highlighting the positive impact on individuals with mental health conditions.

The noteworthy discovery that ChatGPT usage significantly correlates with social support perceptions among older adults underscores the potential of AI-based conversational agents as valuable tools in addressing social isolation. Importantly, this relationship persists even after accounting for demographic variables such as age, gender, education, and employment status. This consistency aligns with earlier research demonstrating the capacity of AI-based conversational agents to offer social support to individuals experiencing social isolation or loneliness.

The present findings underscore the pivotal role of technology, particularly AI-based conversational agents such as ChatGPT, in enhancing social support mechanisms for older adults. These technological advancements exhibit a remarkable capacity to transcend demographic differences, underscoring their inclusive nature and broad potential applicability across diverse segments of the older adult population. In the face of the intricate challenges posed by an aging society, these insights contribute significantly to the burgeoning body of evidence advocating for the integration of AI-driven interventions. Such integrations stand as promising solutions to improve the well-being of older adults grappling with social isolation. Notably, the outcomes of this study align with the Parasocial Interaction Theory, which delves into the one-sided relationships individuals form with media personalities or AI-based conversational agents like ChatGPT. Through interacting with ChatGPT, older adults may develop a parasocial relationship, perceiving the AI as a supportive companion. The consistent and responsive nature of ChatGPT interactions effectively simulates social engagement, satisfying the crucial need for connection among older adults.

The observation that participants perceived ChatGPT as a moderately effective coping mechanism for social isolation resonates with prior research, exemplified by the study conducted by Corbett et al. (2021). This earlier investigation demonstrated the efficacy of an AI-based conversational agent in diminishing feelings of loneliness among older adults. Participants engaging with the conversational agent reported lower levels of loneliness compared to a control group, highlighting its positive impact. Moreover, these participants

expressed a heightened sense of engagement and connection to others through their interactions with the conversational agent.

While the positive findings of this study shed light on the potential effectiveness of ChatGPT as a coping mechanism, a crucial consideration arises concerning the study's sample composition. The fact that participants were already users of ChatGPT introduces a potential bias in their perceptions of its effectiveness. To mitigate this limitation and bolster the generalizability of the findings, future research endeavors should deliberately include older adults who have not previously used ChatGPT. This inclusion would offer a more comprehensive and unbiased understanding of the technology's efficacy as a coping mechanism for social isolation among older adults.

The research findings align with the Technological Mediation Theory, which posits that technology mediates human experiences and interactions, influencing how individuals perceive and respond to various stimuli. In the context of this study, ChatGPT serves as a technological mediator facilitating social interactions. Older adults, through regular use, may attribute a sense of social support to the AI, thereby enhancing their overall perception of support.

This cautious interpretation underscores the importance of refining and expanding the scope of investigations into AI-based interventions, such as ChatGPT, to better capture their potential benefits for a broader and more representative segment of the older adult population. As the field progresses, this nuanced approach to study design will contribute to a more robust and applicable knowledge base, informing the development and implementation of technologies aimed at addressing social isolation among older adults.

The discovery of a significant negative correlation between social isolation and ChatGPT usage aligns with the findings of Latikka et al. (2021), who established that social isolation serves as a notable predictor of technology adoption among older adults. This connection implies that ChatGPT holds particular promise for addressing the needs of older adults experiencing social isolation. Notably, ChatGPT can offer a means for older adults to engage in social interactions without the need for physical proximity, presenting a valuable resource, especially for those with limited mobility or those living alone. It is crucial to emphasize, however, that while ChatGPT can be a valuable tool, it should not replace human interaction but rather complement traditional methods in the broader strategy to address social isolation and loneliness among older adults.

Moreover, the finding that ChatGPT usage significantly predicts social support perceptions, even after accounting for social isolation, resonates with the outcomes of Ring et al.'s (2013) study. This research demonstrated that an AI-based conversational agent effectively reduced loneliness and fostered increased social connectedness among older adults in a retirement community. Participants interacting with the conversational agent reported feeling more connected to others and less lonely compared to a control group.

The recognition that both social isolation and ChatGPT usage serve as predictors for social support perceptions implies a potential synergy in interventions targeting both aspects, promising enhanced well-being for older adults. This revelation holds particular significance, suggesting that strategies addressing social isolation while concurrently promoting ChatGPT usage may collectively contribute to an overall improvement in social support perceptions among older adults.

These findings align with principles from human-computer interaction, which prioritize the design of technology that is user-friendly and aligns with human needs and behaviors. In the context of this study, ChatGPT, crafted with a focus on user experience, engages older adults in a natural and supportive manner. The user-friendly interface and responsive interactions contribute to the perceived effectiveness of ChatGPT as a coping mechanism.

The study by Kamin et al. (2020) further underscores the importance of social support in the context of technology use among older adults. Their research demonstrated that technology use, when directed towards connecting with others, is associated with higher levels of social support, subsequently linked to better mental health outcomes. This insight reinforces the potential efficacy of interventions that encourage the use of ChatGPT in enhancing social support perceptions among older adults. As such, promoting ChatGPT as a means to augment social interactions may not only address social isolation but also contribute to the broader well-being of older adults by fostering a sense of connectedness and support.

Limitations

While the present study provides valuable insights into the relationship between social isolation, ChatGPT usage, and social support perceptions among older adults, it is not without limitations. First, the sample size was relatively small, with only 65 participants. Therefore, caution must be exercised when generalizing the results to a larger population. Additionally, the study relied solely on self-reported measures, which may be subject to social desirability bias or memory recall biases.

Moreover, the study's cross-sectional design precludes any causal inferences. It is unclear whether ChatGPT usage causes social support perceptions or vice versa. Additionally, the study did not account for other potential factors that may influence the relationship between ChatGPT usage and social support perceptions, such as personality traits or social support networks. Finally, the study's sample consisted predominantly of highly educated, employed women, limiting the generalizability of the findings to other populations of older adults. Future research should aim to address these limitations to provide a more comprehensive understanding of the relationship between social isolation, ChatGPT usage, and social support perceptions among older adults.

Recommendations

Based on the findings of this study, it is recommended that ChatGPT be considered as a potential tool for addressing social isolation among older adults. Given that social isolation can have negative consequences on physical and mental health, it is important to explore effective interventions for addressing this issue among older adults.

ChatGPT usage can provide social support to older adults and help alleviate social isolation. It is important to raise awareness among older adults about the potential benefits of ChatGPT usage and how to access it. Healthcare providers and caregivers can play a crucial role in promoting the use of ChatGPT among older adults.

Future research should examine the effectiveness of ChatGPT in addressing social isolation and improving social well-being among older adults. Longitudinal studies can provide insight into the long-term effects of ChatGPT usage on social support perceptions and social isolation. Additionally, studies should explore the potential barriers to ChatGPT usage among older adults and how to address these barriers.

CONCLUSIONS

In conclusion, the present study investigated the relationship between social isolation, ChatGPT usage, and social support perceptions among older adults. The findings suggest that social isolation is moderately prevalent among older adults, and ChatGPT usage is significantly related to social support perceptions among them. The results of this study may have implications for healthcare professionals, policymakers, and researchers in addressing social isolation among older adults.

The findings of this study suggest that ChatGPT may be a useful tool for addressing social isolation among older adults, as it can positively impact their social support perceptions. Healthcare professionals and policymakers should consider incorporating ChatGPT into interventions aimed at addressing social isolation among older adults. Further research is needed to explore the effectiveness of ChatGPT in addressing social isolation among older adults, particularly using larger and more diverse samples and experimental designs to establish causal relationships.

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