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“I Want to Be Alone, but I Don’t Want to Be Lonely”: Uncertainty Management Regarding Social Situations among College Students with Social Anxiety Disorder

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ABSTRACT

Individuals with social anxiety disorder (iSAD) experience adverse outcomes in daily life due to the disorder (e.g., lower educational and work achievement compared to their healthy counterparts). They are prone to social isolation, even though they desire intimate interpersonal relationships. Yet, little research on iSAD is devoted to understanding in detail a) when they interpret social situations as social-anxiety-provoking, b) how this interpretation motivates their assessments of their efficacy and likely interaction outcomes, and c) how they choose specific information-seeking strategies in uncertain social situations. Leveraging the theory of motivated information management (TMIM) and the emotional systems (ES) model, we explored the lived experiences of iSAD. We conducted in-depth interviews ($N = 27$) and analyzed them using thematic analysis. iSAD perceived discrepancies in a) mutual goals, b) common ground, and c) self-image as social-anxiety-provoking. These interpretations motivated their assessments of a) socializing benefits, b) communication competency, and c) interactant partner’s amiability, which led to a mix of information-seeking decisions in social situations. Practical and theoretical implications for future research are discussed.

Social anxiety disorder (SAD) is an excessive fear of one or more social situations where an individual is anxious about being judged by others (American Psychiatric Association [APA], 2013; World Health Organization [WHO], 2018), which involves cognitive mechanisms that can debilitate individuals in defining achievable social goals (Clark & Wells, 1995). For instance, SAD is associated with and may result in physical and functional impairment such as alcohol use disorder (Schneier et al., 2010) and lower educational and work achievement than their healthy counterparts (Lecrubier et al., 2000; Stein & Kean, 2000). Individuals with SAD (iSAD) experience hardship controlling anxiety in social situations (Hofmann & Barlow, 2004) or selecting practical strategies to achieve their goals (Hiemisch et al., 2002). These difficulties in daily life may condition pathological behavioral response patterns (e.g., avoidance conditioning) for iSAD that ultimately may lead to lower communication competence and social isolation for them (Teo et al., 2013).

In terms of health communication, researchers have investigated anxiety with regard to various topics, including medical/physical conditions (King, 1991; Mello et al., 2013), doctor-patient communication (Hamilton et al., 1994; Zhao et al., 2021), or risk perception (Millar & Millar, 1998; Zhao & Cai, 2009). Surprisingly, anxiety experienced across social interactions (i.e., SAD) has rarely been examined in health communication, although SAD can precipitate mental, physical, and communication patterns across an array of interpersonal contexts that are disruptive in the daily lives of individuals. Moreover, most anxiety-related studies, such as the ones

mentioned above, have used quantitative approaches to identify factors related to anxiety. Though informative, quantitative approaches often fail to reveal the dynamic psychological processes of individuals with anxiety disorders (including SAD) in response to various social contexts from a bottom-up perspective. Little research to date has focused on understanding in detail when iSAD experience social anxiety, how they assess social interactions, and what kinds of communication strategies they employ in uncertain interpersonal situations. A qualitative approach here is needed to explore this in-depth through the lens of the participants’ lived experience. To do so, the next section will discuss how iSAD can interpret uncertain situations as social-anxiety-provoking and how that interpretation can lead to subsequent evaluation and decision-making for iSAD.

Theory of motivated information management

Although there are various uncertainty management theories (see Knobloch & McAninch, 2014), the theory of motivated information management (TMIM; Afifi & Morse, 2009; Afifi & Weiner, 2004) provides one of the more detailed models of uncertainty management that seems particularly relevant to SAD. TMIM has proven useful in explaining uncertainty management in various interpersonal/health communication contexts (e.g., Kuang & Gettings, 2020; Morse et al., 2013; Rauscher, 2017). However, TMIM has neither been applied to understanding social anxiety in general nor in face-to-face situations in particular, although later variants of TMIM

(Affi & Morse, 2009) incorporated emotional appraisals explicitly (see below), making the theory particularly relevant to emotionally-based disorders. And, the theory has not been applied to studying how uncertainty is managed among iSAD, which involves a range of cognitions prior to, during, and after social interactions that can be debilitating rather than affording adaptive preparation. Therefore, we extend the application of TMIM to obtaining lived experiences of iSAD in terms of their information-seeking processes, given uncertainty in social interactions.

Social anxiety as an emotional appraisal of uncertain social situations

Appraisal theories of emotion (e.g., Lazarus, 1991a, 1991b; Roseman, 1984, 1991) argue that individuals label emotions by assessing their experiences of events in their environment, which then guide particular action. According to the theorists, uncertain (versus certain) situations are *one* key factor in conjunction with others (see below) that can produce specific emotions, both negative (e.g., anger, anxiety) and positive (e.g., hope, pride) experienced. However, we focused here primarily on social situations interpreted with negative emotions (i.e., social anxiety), as the purposes of this research are to (a) delineate what iSAD experience daily due to extreme social anxiety and (b) lay a foundation for how their social-anxiety-provoking experiences might provide a target for intervention.¹ It is worth noting that certain emotional appraisals of experiences shape individuals' responses to certainty and uncertainty (Brashers, 2001) that can potentially focus individuals on causes or consequences of SAD without effectively reducing SAD reactions in the moment. Thus, it is crucial to understand how social situations can be negatively interpreted (i.e., social-anxiety-provoking) for iSAD in order to properly treat social anxiety.

TMIM leverages Lazarus's (1991a, 1991b) appraisal theory of emotion, which is one of many appraisal theories of emotion (for a review, see Moors et al., 2013). Lazarus argues that individuals evaluate the goal relevance, goal congruency, and ego-involvement of an event, which leads to the identification of a specific emotion followed by their assessment of accountability for the event, beliefs about future expectancies, and their perceptions of coping ability. According to Lazarus's framework, anxiety would result from appraisals that the situation is motivationally relevant, motivationally incongruent, and due to the circumstance but not due to a particular other. Lazarus's appraisal theory, however, has been criticized for being unable to adequately measure and assess the dynamic nature of rapid and automatic in-the-moment emotional responses (Marsella & Gratch, 2003). Our goal in this qualitative research is to examine the within-the-moment dynamics and processes therein of the lived experiences of iSAD.

In that sense, Roseman's updated approach to emotional appraisals (i.e., emotional systems (ES) model; (Roseman, 1984, 2013; Roseman & Smith, 2001) may prove useful here.² Roseman asserts that a given emotional response can be understood (and differentiated from other emotions) in terms of many factors that are concurrently present (e.g., motive consistency, control potential). For instance, Roseman (2013) would argue that fear and anxiety result not when a circumstance-caused phenomenon is

unexpected, but rather when it is *not unexpected* and it concurrently has additional characteristics (i.e., it is motive-inconsistent,³ it is uncertain and it involves low control potential). While social events are usually planned ahead of time (e.g., presentation, party) and predictable when they will take place (e.g., the possibility of having a conversation with a cashier when shopping at a store), interpersonal communication is fundamentally abound with uncertainty (Affi & Weiner, 2004; Berger & Gudykunst, 1991; Brashers, 2001). Therefore, social anxiety may be provoked in predictive but uncertain social situations. In this vein, we bring Roseman's ES model into the current TMIM model to understand the predominant emotional reactions (e.g., negative emotions such as fear and anxiety) of iSAD and ask what situationally precipitates this reaction and how such reaction may precipitate iSAD's decision to engage in dynamic social situations.

Three phases of information management

According to TMIM, both the information seeker and information provider proceed through three stages of information management: interpretation, evaluation, and decision. We argue that Roseman's (2013) ES model provides a way to code iSAD's responses in these three processes. In the *interpretation* phase, individuals become aware of a discrepancy between an actual and the desired level of uncertainty about an issue (Affi & Weiner, 2004). Affi and Morse (2009), as noted earlier, adopted Lazarus's emotional appraisal theory (1991a, 1991b) to propose that this discrepancy in uncertainty produces negative and/or positive emotions, motivating individuals to take action (Affi, 2010). iSAD may experience a discrepancy between the knowledge they currently have and the knowledge they desire to have about the interlocutor in a social situation, which may be interpreted as a social-anxiety-provoking situation. According to Roseman (2013), their anxiety is most likely to be associated with circumstance-caused social events that are unexpected and motive-inconsistent. Based on these notions, the following research question was derived:

RQ1: In which social situations do individuals with SAD interpret uncertainty discrepancy as social-anxiety-provoking?

When it comes to the *evaluation* phase, individuals go through two types of cognitive assessments: outcome assessments and efficacy assessments (Affi & Weiner, 2004). There are three components of outcome assessments (i.e., outcome expectancies; outcome importance, and outcome probability). Outcome expectancies can be defined as the act of gauging the benefits and costs that may result from a particular information-seeking strategy. Outcome importance can be construed as the significance of a particular outcome for the self and/or for one's relationships. Lastly, outcome probability can be understood as the perceived possibility that the expected outcomes will take place. If it appears certain that iSAD will not achieve their goals (i.e., low control potential; Roseman, 2013), they will move away from the other (and dislike). In addition to outcome assessments, individuals evaluate three types of efficacy in managing the perceived uncertainty discrepancy. These efficacy assessments include communication efficacy (i.e., the skills to successfully complete the communication tasks in the information

management process), coping efficacy (i.e., the ability to manage the possible outcomes), and target efficacy (i.e., the estimation of the information provider's willingness to provide complete information). In line with Roseman (2013), iSAD are apt to experience regret and distance themselves from social situations if they perceive that they themselves are the reason for uncertainty (i.e., self-caused uncertainty). Within this framework, the second research question was generated:

RQ2: How do individuals with SAD assess the outcome and efficacy regarding social-anxiety-provoking situations?

Finally, individuals make *decisions* on information management strategies based on the assessments. There are three strategies they can employ to manage uncertainty-related anxiety: seek relevant information, avoid relevant information, or cognitively reappraise the situation (Afifi & Weiner, 2004). First, TMIM adopts three general categories of information-seeking behaviors from Berger and Kellerman (1994). Individuals can seek information (a) passively by unobtrusively observing the information provider, (b) actively by consulting with third parties for information about the target or manipulating the environment, or (c) interactively by engaging in interactions with the information source directly. For iSAD in our study, the information provider could be one or more strangers involved in social situations. Second, individuals can choose to avoid information-seeking, either actively or passively. When iSAD have low efficacy about a perceived threat, they may perceptually defend themselves by actively ignoring the desire to adjust the uncertainty discrepancy rather than reducing it, which can have adaptive value under certain conditions. If the outcome and efficacy assessments turn out to be moderately risky, individuals may passively refrain from active information-seeking and let the situation unfold indifferently. Similarly, Roseman (2013) argues that emotions involving uncertainty (e.g., fear and hope) include *proactive distancing* strategies, which afford coping for situations and events that are at a distance in time or space. By employing proactive distancing strategies, individuals can prepare either to *stop* (i.e., vigilance, inhibition) or *start* (i.e., awaiting, anticipating). It could be that iSAD are motivated to avoid information-seeking in order to decrease motive inconsistency when they encounter uncertainty regarding social situations. Finally, individuals can manage uncertainty discrepancy by making psychological adjustments in three ways. They can change the mindset to rethink the perceived importance of the issue, change the meaning of uncertainty, or shift the desired level of uncertainty. Our last research question was investigated based on these concepts:

RQ3: What information-seeking decisions do individuals with SAD make regarding social-anxiety-provoking situations?

Method

Participants

Following the approval of the institutional review board (IRB), in-depth interviews were conducted from January to April in

2019. Twenty-seven undergraduate students between the ages of 18 and 22 ($M = 20.41$, $SD = 2.95$) were recruited through a subject pool at a large university located in California, United States. The sample consisted of 15 females and 11 males, and one additional participant who declined to report their gender identity. There were 3 Freshmen, 14 Sophomores, 7 Juniors, and 3 Seniors. The ethnic makeup of the participants involved East Asian/Asian American ($N = 10$), Non-Hispanic White/Euro-American ($N = 3$), South Asian/Indian American ($N = 2$), Latino/Hispanic American ($N = 2$), Black ($N = 1$), Afro-Caribbean ($N = 1$), Middle Eastern/Arab American ($N = 1$), Multi-ethnic ($N = 2$), Other ($N = 3$), and those who declined to answer ($N = 2$). Eligibility criteria for undergraduate student participants at the time of data collection included that they needed to: 1) be between the ages of 18 and 24, 2) have had anxiety or fear about social situations (i.e., meeting unfamiliar people, eating or drinking while being observed by others, or giving a speech) in which they were afraid of possible scrutiny by others, and 3) had been experiencing fear, anxiety, or avoidance in social situations for the last six months. The eligibility criteria for participation in the study were based on the DSM-5 diagnostic criteria of SAD (APA, 2013). The recruitment ended when the researchers found similar themes recurring, and no new themes were emerging, indicating that the saturation has been reached (Saunders et al., 2018). See Table 1 for the complete participant list with pseudonyms to protect participant identity.

In-depth interview procedure

After the consent from each participant was obtained, they were asked to take a four-minute survey questionnaire about their level of social anxiety measured by the self-reported version of the Liebowitz Social Anxiety Scale (LSAS-SR; Liebowitz, 1987). LSAS is a treatment-sensitive measure of SAD with

Table 1. Study participants.

Case	Name*	Age	Gender	Year of Study	LSAS-SR
1	Amanda	20	F	Sophomore	91
2	Gina	19	F	Sophomore	71
3	Marilyn	18	F	Freshman	112
4	Sarah	19	F	Sophomore	89
5	Rachel	19	F	Sophomore	84
6	Darian	21	Declined to answer	Junior	135
7	Fred	21	M	Sophomore	51
8	Christina	20	F	Junior	71
9	Amy	19	F	Sophomore	83
10	Karen	22	F	Senior	66
11	Scott	20	M	Junior	60
12	Paul	18	M	Freshman	49
13	Alan	20	M	Sophomore	40
14	Joan	20	F	Sophomore	36
15	Ronald	21	M	Junior	2
16	Joyce	20	F	Junior	69
17	Joe	21	M	Junior	33
18	Rebecca	20	F	Sophomore	106
19	Kimberly	20	F	Sophomore	68
20	Teresa	19	F	Sophomore	44
21	Wayne	20	M	Sophomore	100
22	Gregory	34	M	Junior	59
23	Wanda	19	F	Sophomore	69
24	Ryan	22	M	Senior	33
25	Michelle	18	F	Sophomore	30
26	Steven	19	M	Freshman	54
27	Justin	22	M	Senior	70

*Names were randomly generated to hide participants' real identity.

acceptable reliability and validity that is commonly administered by clinicians in rating social anxiety in practice (Heimberg et al., 1999). Research has shown that the self-reported version of LSAS (i.e., LSAS-SR) compares well to the clinician-administered version (Baker et al., 2002; Fresco et al., 2001), which can be used to differentiate clinical SAD groups from non-clinical SAD groups (Santos et al., 2015). To screen clinically-SAD participants, we followed the cutoff value of 30 (out of 144) according to previous research that tested the optimal cutoff values for LSAS for the diagnosis of SAD (Mennin et al., 2002; Rytwinski et al., 2009), which indicates that individuals with scores below 30 are unlikely to have SAD. The questionnaire asked how anxious or fearful participants would feel in a given social situation and how often they avoid it.

After screening, 26 participants exhibited LSAS-SR scores higher than 30, where one participant scored below the threshold (i.e., Ronald with an LSAS-SR score of 2) and was excluded from the analysis. Therefore, 26 participants were involved in the final thematic analysis. The LSAS-SR scores for 26 participants ranged from 30 to 135 ($M = 68.19$, $SD = 26.56$). After taking the survey questionnaire, participants were interviewed for about an hour by the first author. Participants were audio-recorded after mutual agreement, or the interviewer took notes for those who refused to be recorded ($N = 9$). Interviews were conducted based on a semi-structured protocol, including questions such as, “In social situations, what do you think is the most challenging part?” and “Can you recall an occasion where you were able to overcome social anxiety?”⁴

Thematic analysis

In analyzing the interviews, we employed thematic analysis, which is suitable for exploring personal experiences or identifying practices related to a certain issue (Braun et al., 2016). Among different approaches to thematic analysis (see Braun et al., 2019), we followed the reflexive thematic analysis suggested by Braun and Clarke (2006). In their conceptualization of thematic analysis, themes are viewed as patterns of shared meaning around a central concept that capture the essence of multiple contexts of a dataset built from smaller meaning units (i.e., codes; Braun et al., 2014). To prepare the interviews for thematic analysis, the obtained recordings and notes were first transcribed verbatim by an audio-to-text software (i.e., *Temi*) and then proofread by the authors. Participants' names were anonymized and replaced by random names in this process. All transcribed interviews were analyzed using *NVivo Version 12*, following the six phases of thematic analysis (Braun & Clarke, 2006).⁵

First, each transcription was read repeatedly, where the researchers noted initial thoughts and annotated transcripts. In this stage, we familiarized ourselves with the data. If transcriptions did not provide enough context or nuance, audio recordings were continuously revisited. Revisiting the recordings was necessary when transcripts involved too many fillers (e.g., uh, um, like) or sentence fragments (i.e., sentences that miss a subject, a verb, or both), which required additional cues (e.g., tone and pitch of voice) not present in written language for better understanding. Second, researchers extracted codes

related to research questions from the transcripts. The notes taken in the first phase were also used to aid in organizing codes. Third, the codes from the second phase were reviewed and clustered to construct extended hierarchical themes such that each cluster of codes shares coherent features. Fourth, the potential themes were reviewed by checking the coded data and the entire data set. The themes were reviewed recursively, where some codes and themes were relocated or discarded in the process. Fifth, the final themes were defined and named. The themes were shaped such that they are mutually exclusive and logical. Finally, themes were consistently reviewed and refined. If there was a disagreement on the themes between researchers, a consensus was reached by extensive discussion between the authors.

Findings

Themes on uncertainty discrepancy regarding social interactions

The first research question focused on exploring social situations where iSAD perceive uncertainty discrepancy as social-anxiety-provoking. Three themes were discovered in terms of uncertainty discrepancy that result in social anxiety.

Perceived discrepancy in mutual goals

iSAD in our study reported feeling anxious when they experienced a discrepancy in goals that they pursue and those that others aim for in social situations. In other words, the uncertainty was interpreted as social-anxiety-provoking when their appraisal of the social situation was motive-inconsistent. For example, Joyce indicated that she feels “pressure from others” in a party (i.e., making connections purposefully) that does not match her expectation (i.e., making friends naturally). Similarly, Marilyn acknowledged the gap between how she interprets the situation and what her conversation partners want to achieve:

Typically, like, in class, um, I'll ask them about something and then they won't return the question like, “Oh, how are you?” and then like, “Oh good.” And then I'm like, “Oh, guess you're not as . . .” I'm not going to ask her. And then I kind of get the feels, like, they don't want to talk to me, they don't want to interact. (Marilyn, freshman)

Moreover, certain nonverbal cues, such as looking away from the speaker, indicated a discrepancy in mutual goals (e.g., the other party's indifference in a conversation). For Roseman (2013), this emotional pattern (i.e., dislike toward the situation) involves motive-inconsistency and other-caused uncertainty. A lack of nonverbal cues was also identified as a cue that can impact the interpretation of a discrepancy in mutual goals. A good example is the unwillingness of iSAD to make phone calls, as iSAD felt uneasy when another person's state of mind is unclear due to a lack of nonverbal cues. Not being able to determine if one has mutual goals, iSAD often experienced uncertainty and social anxiety in how to behave in situations with unknown others. They often wondered how they should react to others and what they should say as if they lack a script for a movie scene. Karen's example displays how uncertainty discrepancy in mutual goals can be

interpreted as social-anxiety-provoking and may lead to avoidant behavior:

But, like, for example, that girl that I met, she invited me to go to [an amusement park] this weekend with all of her friends and part of me wants to do that. But, a bigger part of me is terrified to meet all these strangers and just know her because I know how I gravitate to her. And if she's not talking to me, I'm going to be like, "Who do I talk to? Like, what do I do? Why am I here? Like, should I be here? I'll just go home." Like that's, yeah. (Karen, senior)

Perceived discrepancy in common ground

Interlocutors dynamically contribute to conversations by *grounding*, which is the process of establishing *common ground* – knowledge, beliefs, and assumptions that are mutually shared between two individuals in a conversation (Clark & Brennan, 1991; Clark & Schaefer, 1989).⁶ iSAD indicated that they experience high social anxiety when moving to a new school, a new city, or a new environment because there is a mismatch in common ground. Notably, international students indicated their social anxiety when submerged in an unfamiliar culture or speaking in a second language. As an illustration, Christina feels anxious whenever someone asks her, "What do you mean?" because her English pronunciation might be incorrect. Similarly, participants who grew up in a tight ethnic community and then came to a big, diverse university indicated the feeling of "being different," which produced anxiety in social situations. For example, Joe said his social anxiety derived from being a student of color at a mostly "White" university.

Others had experiences of being bullied or ostracized when moving to a new environment, which potentiated in them a tendency to second-guess others' intentions whenever they are in an unfamiliar place and feel like they do not belong. Participants expressed that their anxiety usually stems from being unsure of what the social rules are in the new community or what is expected of them in a situation. Fred demonstrates an example of feeling insecure in uncertain social situations:

When I go into completely new room and I don't know how the whole system works, I don't know how to act like I, I tried joining [a club] last semester. I went to one meeting by myself and I looked around, I'm like, "I don't know how to act." And I just like sat there by myself and I was like, "I'm going to go." Yeah, I left. I left because I just like, it just, I was just uncomfortable. (Fred, 21)

As such, uncertain social situations can evoke a reduced sense of security, which demotivates iSAD from engaging in social interactions. Over a period of time, they may become used to not knowing how to act in uncertain situations (i.e., low control potential), which can lead to more distress and distancing strategies (as in Roseman, 2013). Therefore, having common ground with others plays a substantial role in potentially mitigating social anxiety in the interpretation phase.

Perceived discrepancy in self-image

The third theme we discovered was perceived discrepancy in self-image. Wanting to present a good self-image was social-anxiety-provoking for iSAD, as they paid special attention to how they are perceived by others and ensuring that they do not disappoint someone. For instance, Steven indicated that he was

afraid of the gap between his superficial self and his real self in interpersonal relationships ("I'm not that deep of a person. [...] If I open up too much, then they won't like me anymore and then it'll just end, I guess."). Social anxiety was also present in public social interactions, especially when iSAD were worried about the possibility of being perceived as incapable. In a class presentation, Karen noted that her social anxiety increases when she is nervous about presenting herself as "stupid" or "uneducated" to others. Similarly, Wayne had trouble asking for help in a store even though it was completely warranted because he might be asking a dumb question. As such, iSAD had overly high expectations of their social image but could not execute the image due to their interpretation of social situations (i.e., social-anxiety-provoking).

Such desire to present the ideal social image (and not make a "mistake") hindered their ability to perform professionally, especially when they perceived discrepancies in power relationships. Once iSAD felt that they were in a subordinate position compared to authority figures (e.g., professors or teaching assistants), social interactions were minimized because of the possibility of being judged as inadequate. For instance, tasks that may seem trivial to healthy populations (e.g., contacting a professor about making up an exam) were interpreted as social-anxiety-provoking due to the different social statuses. Nevertheless, some iSAD were aware that their perception is biased and sometimes can be pathological. They indicated that they could not help almost instinctively perceiving that the other person is judging them and that they needed time to adjust their thoughts:

I think, the person in authority, I think that they're looking down on me and that, like, kind of makes me anxious and feel like if I mess up, they're going to yell at me or like, they're angry at me. [...] I know that they've, that's probably not what they, they're thinking but I need to like, feel it. So, it takes me a while to like come to that conclusion. And like, feel that, "Oh, they're not really looking down on me, cause they have more important things to worry about." (Teresa, sophomore)

Therefore, SAD interventions might potentially target the negativity bias of iSAD and try to reduce the time it takes for iSAD to alter their biased perspectives about social interactions.

Themes on the assessments of outcome and efficacy regarding social interactions

The second research question examined how iSAD assess the outcome and efficacy in social-anxiety-provoking situations. Three themes were discovered.

Assessments about the benefits of socializing

iSAD in our study have shown that the desire to belong is a contributing factor in terms of the cost-benefit analysis of the information-seeking (i.e., socializing) outcomes. Some participants preferred spending time alone over spending time with others. Socializing had relatively little outcome importance for some of them. For Christina, the benefit of staying alone was valued to the extent where building relationships can be a "waste of time." Similarly, Paul mentioned that he

occasionally develops an aversion to socializing when his alone time is needed:

In general, like, I need to recharge, like, pretty much after a day. It would be like, a day of, like, activities and stuff, and like, doing outgoing activities. So, like, when I, like, get back to my dorm or whatever, then I'm like, super, like, I don't want to talk to anybody. I'm just like, let me do work in my room. So sometimes I can be, like, up here kind of like, "I hate everyone." (Paul, freshman)

However, most participants indicated holding ambivalent assessments about broadening social relationships. They were aware of the benefits that relationships can bring (e.g., more opportunities, emotional comfort), but their social anxiety seemed to lessen the outcome probability assessments – they had low expectancies about the likelihood of socializing actually occurring. While interviewees repeatedly expressed that they strongly detest social interactions (e.g., "I feel more drained meeting people than going to the gym and running five miles," Wayne), many indicated that this feeling is an *internal conflict*. They longed for closeness with others, yet at the same time, shied away from it. It can be best explained by Wayne's description of his mentality regarding parties: "I like being invited but I don't like the idea of going there actually." Even so, iSAD were aware that social anxiety can be isolating. They indicated that their achievement is limited as social anxiety makes them stay inside their comfort zone and can potentially harm their ability to pursue their career (e.g., get a job interview). Therefore, tackling the assessments of time alone versus socializing can be vital in addressing the impairments in daily life that spring from social anxiety.

Assessments about communication competency

In anxiety-provoking social situations, iSAD mentioned that they do not have confidence in managing conversations (i.e., low communication efficacy) or dealing with social anxiety during the event (i.e., low coping efficacy). For some participants, their social anxiety manifested as being overly talkative or speaking too quickly, which worsened their social anxiety and reduced their self-efficacy about communication skills:

I try really hard to be like, overly funny or like, even louder. I'm a very loud person to begin with, but I don't want people to know that I feel that way. So, I try to overcompensate and sometimes I feel like I talked too much. And, so then, I start being conscious of that and then I get more anxious (Karen, senior)

When the situation got worse, iSAD showed a pattern of blaming themselves for having a low level of communication competency. For example, Steven thought he could not offer something interesting to other people in social interactions because he is "not like a super fun person." Similarly, Sarah associated her "standoffish" look with her low communication competency. Their communication competency decreased even more when no friends were accompanying them. For instance, they would not attend a party if they are not familiar with the people at the party because their self-efficacy assessment is low (e.g., "Believe me, if I only have one other friend at this party and we're not really good friends, I'm not going," Joe). Therefore, iSAD could benefit from training sessions that can boost their self-efficacy in

communication competency even when attending social events alone.

Assessments about amiability of the information provider

Because iSAD usually had low self-efficacy about communicating with others in social situations, the information provider's level of friendliness (i.e., target efficacy) was deemed an important factor in seeking information about the other. For instance, the outer appearance of the other party in the initial stage of the relationship was considered:

Actually, what makes me more comfortable is, if someone looks . . . People have a look to them. Like, some people have, like, a more aggressive looking face, sharper, sharper features. Like, thicker, like, a sharper jaw line. They intimidate . . . it's a little intimidating. So, I look for people who are a little more, a little more, bubbly look. (Gregory, junior)

Participants also indicated that they gravitate toward people who have personalities that are easy to approach in the beginning stage of relationships because those kinds of people often tend to lead the conversations. For iSAD, having someone who can provide a script for what to say in initial interactions was assessed as a huge benefit. Therefore, a motive-consistent interaction for iSAD may be more attributed to the other party in the interaction than the self – this might suggest an unequal power relationship in the friendships they do develop. One strategy for iSAD to overcome this inequality was seeking additional cues to avoid or escape others who are dominating. Indeed, when people involved in a social interaction seemed too opinionated, iSAD assessed them as more judgmental and tried to avoid further information-seeking (e.g., "I like people with soft personality. They don't judge me. But I don't like people who force their opinions onto others," Christina).

Themes on information-seeking decisions regarding social interactions

The third research question was to investigate information-seeking decisions iSAD make regarding social situations. Three themes were uncovered.

Decision to avoid social interactions

When iSAD decided to avoid information-seeking in social interactions, they showed various decisions ranging across active avoidance, passive avoidance, and a mix of active and passive avoidance. If the situation allowed iSAD to do so, they avoided social interactions actively – this was the case when they had low outcome expectancies from socializing. For instance, they chose not to attend parties, skipped meals to avoid eating alone in public, or refrained from being involved in group projects in classes. In extreme cases, participants would prefer to endure disadvantages that result from SAD because in-person interactions can never be an option. For instance, Darian feels more comfortable ordering everything online instead of visiting a physical store because "there's nowhere to hide" and is fine with not getting a driver's license because "it's too much to be there."

In inescapable social situations (e.g., when they are already in the situation), however, iSAD did not have a choice but to

manage social anxiety by employing passive avoidance. Such decisions were manifested by being in the situation but not engaging oneself in any social interactions at all, usually by sitting still or going on the phone to exclude oneself from the rest of the world. In other cases, participants were able to achieve a particular social goal (e.g., ordering food in a restaurant) by passively observing – they relied on friends or family members to do the task instead. For instance, Rebecca asked one of her friends to get help at a store because she does not want to go up to the person. However, passive avoidance could produce an awkward social situation that causes damage to the representation of one's social self: Christina recollected an embarrassing moment in which the whole class stayed silent for a while because she did not say anything when a professor asked her a question.

In most cases, the distinction between active avoidance and passive avoidance was not clear-cut, as iSAD would often employ a mix of both strategies. For example, participants showed behaviors of fulfilling the purpose of being at a social event (e.g., celebrating a friend's birthday) and then leaving the scene to minimize further social interactions with strangers. Alan demonstrated a similar instance:

I was in my friend's apartment, and I know like, my friend and his roommate fairly well, but then, they had a couple girls from some sorority come and we were all hanging out. So, it was me, two kids I knew, and then these two girls. I had no idea who they were. [...] There's like the, the basic small talk. And then after that finishes, I guess it tends to, like, I just tend to not know what to do from there and a conversation. [...] I, probably, I left earlier than I would have had they not been there. (Alan, sophomore)

Decision to pursue social interactions

Compared to avoidant decisions, instances of information-seeking decisions generated by iSAD were rare. Where they could, they almost instinctively chose to avoid social situations. However, when information-seeking was necessary for inevitable social events, they explored in advance who will be attending and what kind of people they are. For instance, Darian indicated that when planning to go to museums, they search for time slots where attendance was expected to be low to avoid random social interactions. Similarly, when invited to a party, Wayne asks the host what the people attending are like to get a sense of the atmosphere of the planned party. One interesting strategy taken by Amanda was to utilize social media to reach out to people attending the social event to make connections beforehand – she reached out to her roommate on Facebook before starting college in order to make sure she would know someone there she had spoken to beforehand.

In cases where they had to give a presentation, interviewees would seek information about the topic of the speech to know it well enough to answer questions from the audience or learn about the environment where the presentation will take place. For instance, knowing that the classroom has a podium helped Rebecca hide her shaking body during a presentation by standing behind the podium. Passive strategies of observing others were also utilized such that iSAD can gather information about others while participating in the social event. For example, Michelle tends to join a group of people playing games at a party because it automatically involves her in a social

situation while being “less weird,” affording her an opportunity to watch others without “bothering them.”

Of the three information-seeking strategies (i.e., passive, active, interactive), interactively seeking information in social situations was particularly rare for iSAD. When interactive information-seeking took place, it was when they met someone considerate enough to understand their social anxiety. Even in these situations, participants indicated that they would listen rather than talk for the most part (e.g., “I know a couple of people who are super friendly and talk all the time and you can just completely listen. And, that's much easier for me in the beginning.” Sarah).

Decision to reappraise social interactions

Not all iSAD were capable of making decisions to reappraise social interactions, but some participants showed how they could manage social anxiety by rethinking their uncertainty discrepancy and assessments about the outcome and their efficacy. They interestingly indicated that acting or assuming a different personality helped them reappraise their perception of social interactions, as it would be their acting that is judged by others and not the real self. For example, Fred explained the benefits of portraying characters from TV shows as creating a distance between his real personality and other people's views of him:

I feel like once you start treating me as acting, my feelings of anxiousness and nervousness go away because like — this isn't me. I can be someone else. And if the person doesn't like me, that's not me. That's just, I'm pretending to be someone else. It's a different personality. (Fred, sophomore)

Another reappraisal strategy was to push oneself to have a more objective and logical mindset about how others will judge one. Reframing their perspective seemed to help iSAD overcome their social anxiety and continue information-seeking in social situations. For example, Alan mentioned that telling himself to block out anxious thoughts (“No one here thinks you're weird or anything like that.”) tends to reduce social anxiety instead of looking at the phone and presenting himself as an awkward person.

Discussion

The goal of this study was to (a) identify the uncertainty discrepancy experienced as social anxiety by iSAD regarding social situations, (b) investigate how they assess the outcome and efficacy regarding social-anxiety-provoking interactions, and (c) unveil their decisions and strategies to seek information accordingly. In addressing these research questions, we adopted the framework of TMIM (Afifi & Morse, 2009; Afifi & Weiner, 2004).

Theoretical contributions

Theoretically, this study extended the application of TMIM to an understudied population in communication (i.e., iSAD). SAD has not received enough attention in health communication, although its onset, development, and effects are abundant with communication components. Prior research utilizing

TMIM was predominantly quantitative in nature and could not provide specific contexts of social interactions in which TMIM can be applied in understanding SAD. To the best of our knowledge, our study is one of the first in the field to conduct in-depth interviews on iSAD through the lens of communication studies. Our findings suggest that TMIM can explain how iSAD confront uncertainty in social situations; the uncovered themes identified are closely aligned with the three phases of information-seeking proposed by TMIM (i.e., interpretation, evaluation, and decision). Therefore, the findings contribute to the field by depicting the layers embedded in each of the three phases of TMIM with lived experiences of social interactions among iSAD. In addition, the current work advances TMIM by connecting Roseman's (2013) appraisal theory to TMIM in explicating iSAD. Roseman's ES model sets the background for delineating how iSAD operate under uncertain circumstances that are not unexpected with low potential for control in the unfolding dynamics of the situation. Moreover, Roseman's theory suggests that a myriad of emotional reactions are possible depending on whether or not the perceived uncertainty is motive-consistent. This link between TMIM and Roseman's appraisal theory opens up intriguing possibilities for rethinking uncertainty management and how it might operate with SAD interventions.

While TMIM provided an insightful framework in approaching iSAD, the results of our study suggest potential improvement for the theory to extend it. In analyzing the interviews, we found it very difficult to draw a fine line between different information-seeking strategies within a single social interaction. For instance, one can attend a party and stay inactive by not interacting with strangers (i.e., passive avoidance) and leave immediately after interacting with the host only to signal that they were present (i.e., active avoidance). Therefore, the theory can integrate elements that explain when individuals employ multiple strategies for the same social situation. Two interpretations are possible. One could be that social anxiety motivates individuals to generate multiple strategies to balance the social benefits and desire to avoid strangers – goals that may be hard to integrate for iSAD. Alternatively, the initial intention of going to the party might have changed during the event, eventually leading one to change the information-seeking decision. While TMIM argues that individuals can dynamically interact and change strategies accordingly (Afifi & Morse, 2009; Afifi & Weiner, 2004), the theory can benefit by identifying factors that influence multiple (potentially incompatible and not integrated) goals and mixed information-seeking strategies and shifting intentions, and how these might be assessed in-the-moment and changed.⁷

Practical implications

Practically, this study lays a foundation for future interventions targeting iSAD. The findings demonstrate that iSAD have ambivalent feelings about socializing (i.e., the need to belong versus dislike toward social interactions), which eventually put them in disadvantageous positions compared to others who have good communication skills. It has to be noted that one main source of social anxiety for iSAD is

a lack of scripts or guidelines in social situations– they intended to interact with others but eventually made decisions that led to consequences incompatible with their goals. iSAD demonstrate that what we take for granted (e.g., basic social communication skills) may not be naturally learned for certain populations. As demonstrated in the findings, lack of scripts could be problematic in achieving essential requirements (e.g., unable to obtain a driver's license) or harm the social reputation of iSAD (e.g., remaining silent when called upon in class). Hence, training scripts in uncertain social situations is a necessary component of SAD interventions.

A good starting point is to initiate socializing through friendly individuals, as participants indicated that they were successful in interactively seeking information if the other party was tolerant with one's social anxiety. Interventionists can train iSAD by initiating social interactions with friendly partners at the beginning stage and gradually decreasing the conversation partner's level of affability over time, making social interactions increasingly more challenging until those situations too are mastered. Clinicians could also train iSAD to practice how to respond to a range of typical scripted social situations while habituating them to the social complexities of these contexts.⁸ Another possible option for training scripts in social situations is to role-play a character when one is too vulnerable to continue social interactions, as suggested by some participants. However, for long-term results, shifting one's mindset to a logical perspective (e.g., acknowledging that not everybody is judging) seemed more sustainable. Relying on a different personality may potentially exacerbate SAD, as iSAD indicated that they are afraid to show their real identity to others.

Furthermore, iSAD could be trained in identifying and responding to perceived goal differences and achieving mutually rewarding social interactions. Grounding is essential to ensure that one's message has been understood as intended and that interlocutors understand the purpose of the communication and have skills for increasing common ground (Clark & Brennan, 1991). Common ground can be achieved through training iSAD to listen attentively for signals of recognition and pose questions to others to discover common experiences for further discussion (Gergle et al., 2013). In addition, our findings indicate that focusing too much on the self and self-image can undermine social interactions for iSAD. Thus, training iSAD in mindfulness tasks and external focus (Wells, 1990, 2009, 2013) can reduce self-focused attention and anxiety (Fergus et al., 2014), which can direct attention more on the conversation partner than the self (Miller et al., 1983) while enhancing common ground and reducing anxiety about being judged.

Lastly, the illustrated situations can be designed as virtual reality (VR) interventions, where participants can experience social interactions in safe (i.e., realistic but not actual) environments.⁹ VR can afford (scalable) built-in generalizability from the virtual to the real world and afford opportunities for targeted individuals to change responses not only in virtual worlds but in similar situations in everyday life (Miller, Jeong et al., 2019; Miller, Shaikh et al., 2019). Thus, we might scale the level of social anxiety (i.e., the least to the

most social-anxiety-provoking) triggered in different circumstances in a virtual environment (i.e., in the “default control group” as in Miller, Shaikh et al., 2019) and directly compare that behavior to behavior in an experimental virtual condition (i.e., with an added intervention), affording a test of the intervention’s efficacy.

Limitations and directions for future research

The findings of this study should be interpreted while considering several limitations. First, a comparison group of healthy individuals, which we did not include, might provide insight into the communication strategies individuals without SAD exhibit in the same triggering contexts. Such a group might not only tell us what the range of typical (i.e., non-SAD) responses are in the population to the same SAD triggers, but also suggest intervention targets for iSAD (what they could do instead that would be more effective). Second, participants in our study not only suffered from SAD but also from other mental disorders.¹⁰ The comorbidities may introduce confounding interpretations, as we cannot entirely attribute our findings solely to SAD. Third, future research may combine quantitative and physiological measures. In-depth interviews alone are unlikely to be sufficient to understand what we would like to know about the experiences of iSAD because not all elements of fear and anxiety are accessible by introspection on inquiry (Foa & Kozak, 1986). Multiple approaches would expand this study by investigating possible predictors that potentially contribute to triggering SAD and what interventions might gradually move iSAD into a more “normal” range of communication functioning. Fourth, cross-sectional interviews with the participants may not have provided sufficient information about their true thoughts and feelings, as contact with the interviewer itself can be social-anxiety-provoking. Therefore, future researchers might interview iSAD multiple times over a long period to build rapport or integrate methods that are not in-person (e.g., text-based methods such as online chat) to probe the participants’ experiences more deeply. Finally, our study only considered iSAD as an information seeker. However, iSAD become information providers as well in social events such as public speaking (i.e., seeking the audience’s response at the same time presenting information). Thus, future researchers can investigate how their decisions vary according to their role in a social situation.

Conclusion

Leveraging the lens of TMIM, this study is a step toward understanding the communication patterns exhibited by iSAD and the ways in which these patterns may limit their potential social functioning due to the disorder. Moreover, this study is the first in the field to apply TMIM in examining the lived experiences of iSAD. The findings of our study are expected to be used to derive guidelines for iSAD in confronting social anxiety and to eventually develop efficacious interventions for iSAD in practice.

Notes

1. While anxiety and fear are typical human responses, SAD involves extreme anxiety and fear that are pathological and not “adapted for” responses, which can persist over long periods (APA, 2013; WHO, 2018).
2. Roseman’s (2013) theory, and evidence in support of it, supports specific in-the-moment emotional appraisals (differentiating specific emotions, resulting from concurrent factors such as the cause of uncertainty or motive consistency) accompanied by an empirically-based “emotional syndrome” of component cues (phenomenological, expressive; behavioral, e-motivational goal), many of which afford observable micro-changes that can rapidly shift from moment to moment (e.g., micro movements such as stopping or moving toward).
3. Motive inconsistency (versus consistency) refers to the adaptive value of internal and external changes such that getting less (more) of it minimizes harm (maximizes benefits) (Roseman, 2013).
4. The interview protocol is available from the corresponding author upon request.
5. This process is highly similar to the processes used for qualitative interviews in initially designing a virtual reality intervention game for men who have sex with men (MSM). Analyzing the interviews successfully enabled instantiation of situations in virtual reality environments to which individual participants would respond as they did in everyday life (Miller et al., 2011). Ultimately, the results of the current study, along with additional formative research, can be used to design virtual reality environments that resemble the situational cues present when individuals with SAD experience social anxiety in everyday life, which can activate problematic response patterns that may be targeted for intervention change.
6. Here we use common ground to refer to both the construction of shared meaning but also the production of behavior that fits within shared cultural expectations.
7. For further discussion, see Miller, Jeong et al. (2019) and Miller, Shaikh et al. (2019).
8. An examination of our findings in light of Parks’s (1994) hierarchical model of communication skills also points to communicative competencies that may be helpful for iSAD in terms of training their communication skills. For instance, here are some of the communication competences suggested in Parks’s model that may be targeted for SAD interventions: (a) ability to satisfy personal goals in a given context without jeopardizing more important goals in other contexts, (b) ability to improvise plans of action when interaction is disrupted, and (c) ability to interpret one’s own actions and the actions of others from a variety of perspectives.
9. This is in line with work on virtual reality exposure therapy that has been regarded as an innovative method to improve psychological impairments (e.g., Rizzo & Koenig, 2017; Rizzo et al., 2019).
10. Comorbidities that our participants reported include general anxiety disorder, depression, bipolar disorder, attention deficit hyperactivity disorder, and post-traumatic stress disorder.

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