

Smartphone Communication Frequency in Adolescents and its Relationship with Internalizing Problems

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INTRODUCTION

- Over 90% of US adolescents own a smartphone, and most use it to communicate with their loved ones via phone calls, text messages, and social media posts.
- Prior literature has shown mixed findings regarding the relationship between smartphones communication methods and internalizing problems¹⁻⁶.
- Little work to date has examined other smartphone communication methods (e.g., video calls or audio recordings)⁷.
- This study explored if six smartphone communication methods are each associated with internalizing symptom severity in a sample of depressed adolescents.
- We expected higher frequencies of video calls, audio recordings, and video recordings to be associated with higher levels of internalizing symptoms.

PARTICIPANTS

- $N=58$ adolescents ages 12-18 ($M_{age}=15.59$, $SD_{age}=1.53$)
 - Mostly female (65.52%) and Hispanic (74.14%)
 - Race:** $N=25$ (43.10%) White, $N=12$ (20.69%) Black or African American, $N=1$ (1.72%) American Indian or Alaskan Native, $N=4$ (6.90%) Multiracial, $N=6$ (10.34%) "I don't know," and $N=10$ (17.24%) as Other
- Participants were recruited from the Center for Children and Families, Miami-Dade County high schools, or through social media advertisements.
- Eligible participants met a minimum score of 16 on the Center for Epidemiological Studies-Depression Scale (CES-D).

METHODS

- Data was collected from an ongoing study that uses smartphone-based ecological momentary and mobile sensing over one month to model idiographic networks of depression symptoms⁸.
- Youth Self Report (YSR) at follow-up:** Assessed internalizing and externalizing problem behaviors using 8 broadband scales⁹.
 - Two subscales used in current project:
 - Anxious/Depressed Syndrome Scale
 - Withdrawn/Depressed Syndrome Scale
- Smartphone Communication Interview at follow-up:** Assessed frequency of six types of smartphone communication methods used in past month: audio call, text/app message, voice recording, video chat, video recording, and social media post/reply.

RESULTS

- Adolescents reported using each method at least a few times per week or more: phone call (96%), text message (98%), social media posts (62.7%), audio calls (37.3%), video call (60.8%), audio recordings (45%), video recordings (51%).
- Among all communication methods, both the frequency of voice recording and video recording were positively correlated with anxious-depressed T-scores from YSR, $r(56) = .28$, $p < .05$ and $r(56) = .29$, $p < .05$.
- Regression analyses** revealed two significant models. None of the other models were significant.

Figure 1: Regression of YSR anx/dep T-score on the frequency of voice recording

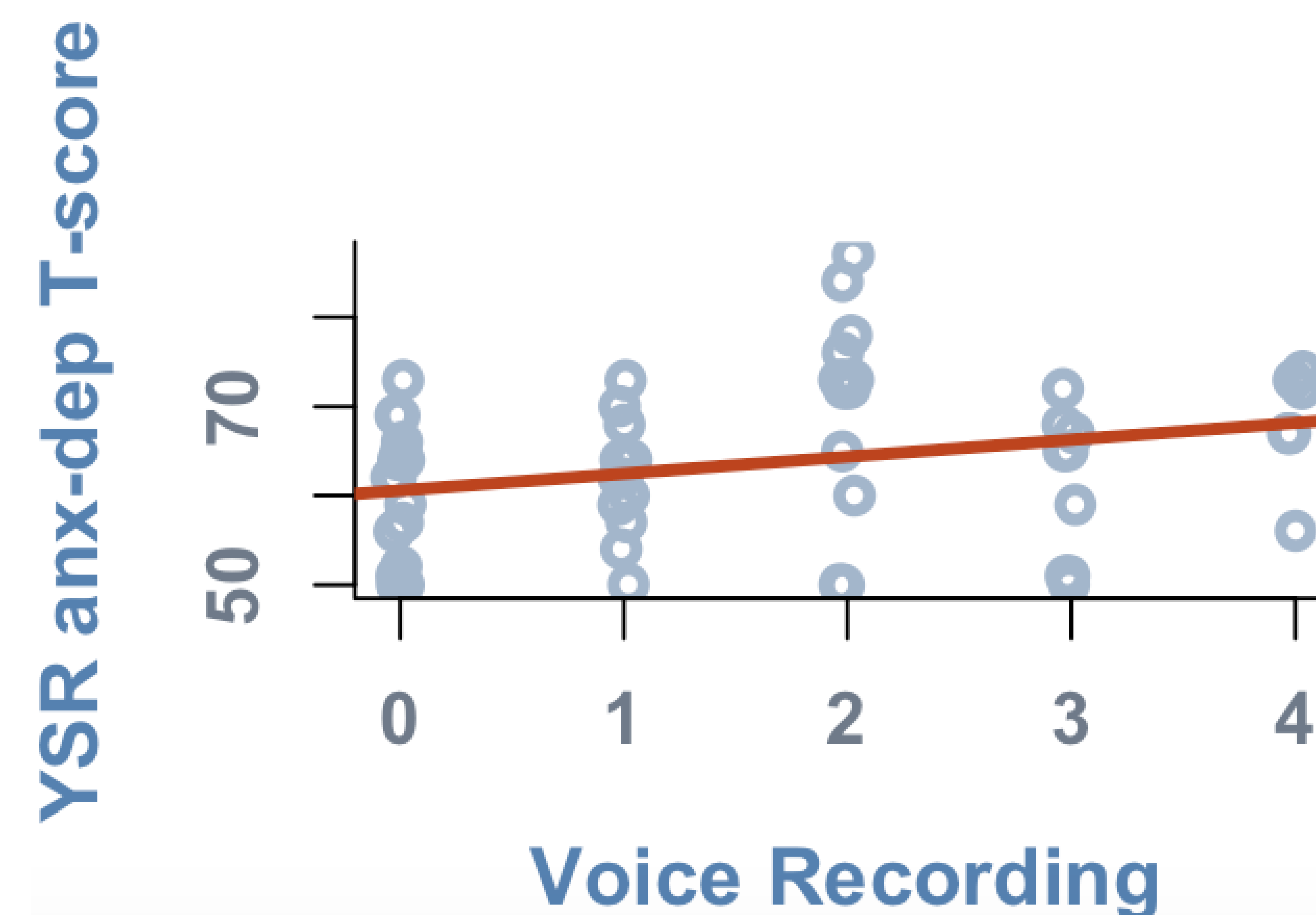
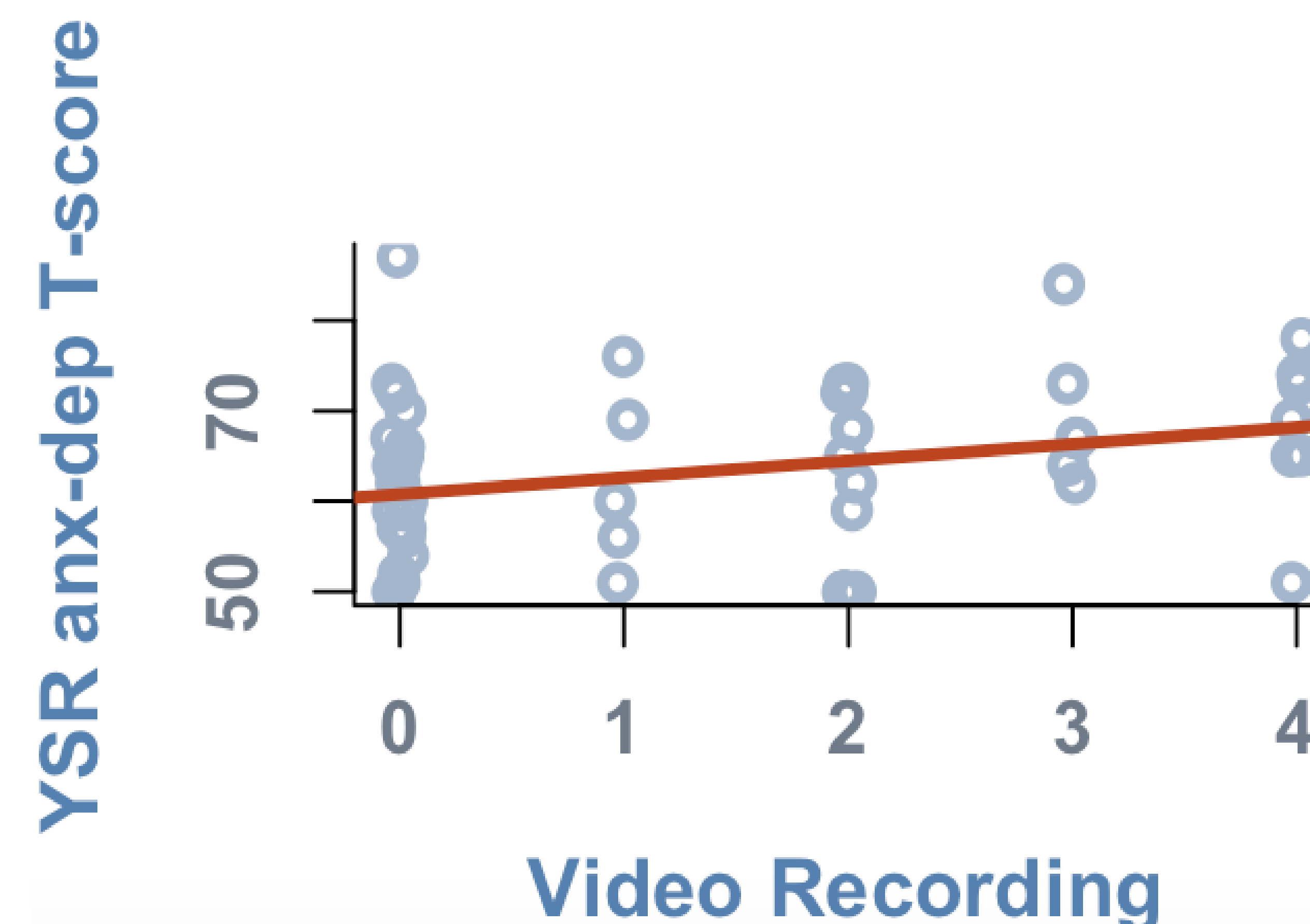


Figure 2: Regression of YSR anx/dep T-score on the frequency of video recording



RESULTS CONT.

- According to **Figure 1**, the first significant model ($F(1,56) = 4.682$, $p < .05$) came with an R^2 of 0.08.
 - This finding suggests that the frequency of voice recording accounts for approximately 8% of the variance in anxious-depressed T-scores from YSR among adolescents.
 - The coefficient was 1.91, suggesting that each additional Likert scale point increase in the frequency of voice recording predicted a 1.91 increase in the anxious-depressed T-scores from YSR.
- According to **Figure 2**, the second significant model ($F(1,56) = 5.241$, $p < .05$) came with an R^2 of 0.09.
 - This finding suggests that the frequency of video recording accounts for approximately 9% of the variance in anxious-depressed T-scores from YSR among adolescents.
 - The coefficient was 1.85, suggesting that each additional Likert scale point increase in the frequency of video recording predicted a 1.85 increase in the anxious-depressed T-scores from YSR.

DISCUSSION

- We found significant associations suggesting that certain communication methods (i.e., voice recording and video recording) are correlated with higher levels of internalizing symptoms among adolescents.
- Future studies should assess anxiety and depression separately to examine the unique relationships between the use of communication methods and anxious or depressive symptoms.
- Longitudinal studies are needed to study the causal and bidirectional relationship between the frequency of smartphone communication methods and internalizing symptoms in adolescents.



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