

The background of the slide is a dark blue field filled with a complex network of glowing blue lines and dots, resembling a digital or social network. On the left side, there are white line-art icons of circuit boards and nodes. The title text is centered within a white rounded rectangle.

# LONGITUDINAL NETWORK ANALYSIS OF ONLINE GAMING COMMUNICATION: IMPLICATIONS FOR DEPRESSIVE SYMPTOMS AND SOCIAL SUPPORT

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# BACKGROUND

65% of Americans report playing video games daily

Health concerns including depression and reduced social involvement

Extend real life relationships and/or make new online friendships

Online sites may be a comfortable “third place” for individuals to share and connect anonymously

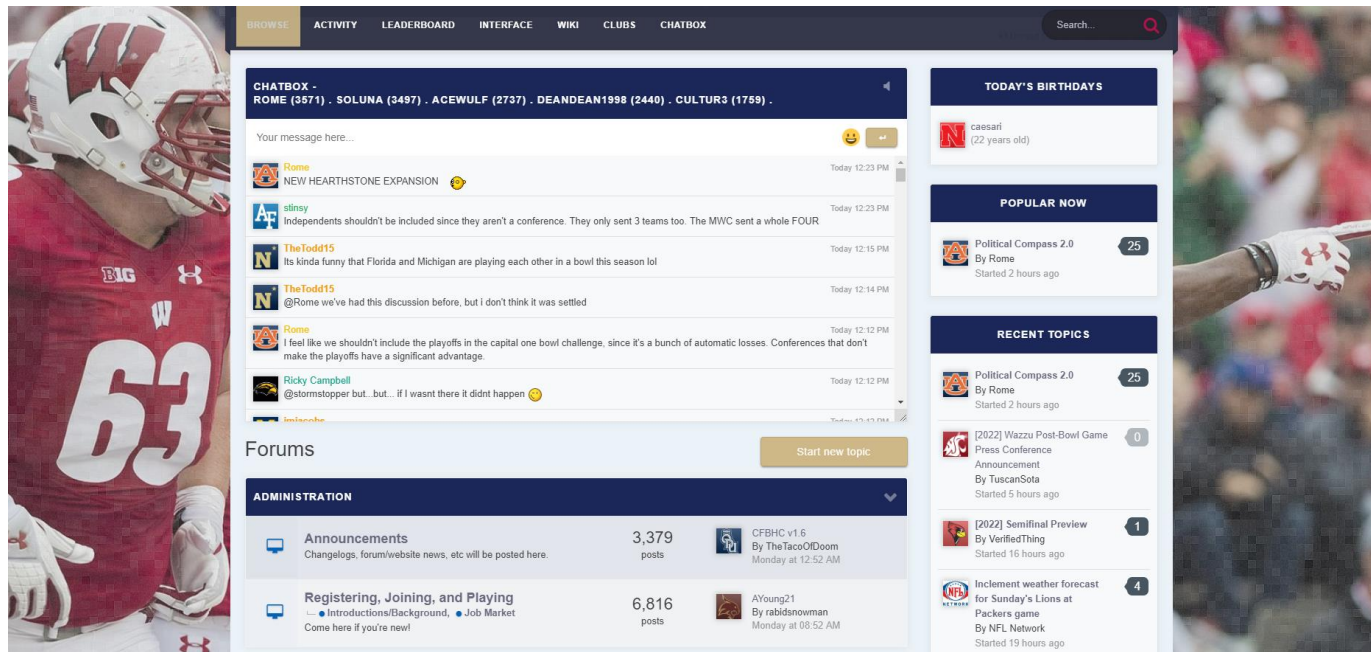




# OBJECTIVE

1. Use longitudinal social network analysis to investigate the social structure of an online gaming site.
2. Assess how factors such as online and IRL social support, sense of community, and depressive symptoms are associated with whether members of an online gaming site speak to other members about important life matters.





## SITE DETAILS

User run and  
operated

Text based simulation  
of college football

Forums and Chat  
Functions

Roughly 100 members



# METHODS



## Setting

Online football simulation game

Participants (n=40)



## Measures

Depressive Symptoms – PHQ-9

Online and “in-real-life” (IRL) Social Support



## Social Network

Nominated other members on the site with whom they spoke to about important life matters



## Time-points

May 2019 – March 2020

Roughly one “season”



## Data Analysis

STERGMs



# RESULTS

n=40; Mean age = 25.25 years old (SD=6.88)

All respondents were male.

80% identified as White

70% were employed and 30% identified as students.

Members spent, on average, 14.75 hours (SD=12.36) on the site per



# CHANGE IN NETWORK





Parameters	PE (SE)	p-value
Edges	-5.72 (1.26)	<0.01*
Reciprocity	0.87 (0.30)	<0.01*
Transitivity	0.71 (0.12)	<0.01*
Homophily		
Age	0.07 (0.02)	<0.01*
Depressive Symptoms	0.04 (0.03)	0.15
Receiver Covariates		
Age	0.03 (0.01)	0.02*
Sense of Community	-0.12 (0.19)	0.53
Site Hours	-0.02 (0.01)	0.06
IRL Support	-0.01 (0.18)	0.94
Online Support	0.05 (0.15)	0.72
Depressive Symptoms	0.01 (0.02)	0.88
Sender Covariates		
Age	0.04 (0.02)	<0.01*
Sense of Community	0.38 (0.19)	0.04*
Site Hours	0.01 (0.01)	0.18
IRL Support	-0.52 (0.18)	<0.01*
Online Support	0.44 (0.16)	<0.01*
Depressive Symptoms	-0.06 (0.02)	0.02*

# FORMATION



Age

Sense of Community



Support

Depressive Symptoms





Parameters	PE (SE)	p-value
Edges	6.61 (5.31)	0.21
Reciprocity	-0.17 (0.74)	0.80
Transitivity	0.56 (0.27)	0.04*
Homophily		
Age	0.17 (0.08)	0.03*
Depressive Symptoms	-0.10 (0.06)	0.14
Receiver Covariates		
Age	-0.10 (0.07)	0.13
Sense of Community	0.60 (0.59)	0.30
Site Hours	0.06 (0.02)	0.02*
IRL Support	-0.32 (0.50)	0.52
Online Support	0.49 (0.51)	0.33
Depressive Symptoms	0.06 (0.07)	0.38
Sender Covariates		
Age	0.02 (0.06)	0.74
Sense of Community	0.16 (0.43)	0.71
Site Hours	0.01 (0.02)	0.42
IRL Support	-1.19 (0.58)	0.04*
Online Support	-0.62 (0.37)	0.09
Depressive Symptoms	-0.02 (0.05)	0.63

# MAINTENANCE



Age

Site Hours



Su



# CONCLUSIONS

## Age

May indicate users looking for connection after IRL connections fade

## Community

Contact = comfort and community

## Support

Mixed results

- IRL – less need for stable online connections
- Online – felt support through connections

## DS

Could indicate help seeking behavior through formation of online contacts





# STORIES OVER SPREADSHEETS

# NEXT STEPS

LARGER SAMPLE

MULTIPLE GAME GENRES

WORKING WITH DEVELOPERS

IMPLICATIONS FOR ONLINE LEARNING AND  
TELEHEALTH





# QUESTIONS



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