



ORIGINAL RESEARCH PAPER

Clinical Psychology

IMPACT OF THWARTED BELONGINGNESS ON ALCOHOL USE AMONG ADULTS AND THE ROLE OF PHYSICAL ACTIVITY INFLUENCING THEIR RELATIONSHIP

KEY WORDS: Thwarted Belongingness, Alcohol use, Physical Activity, Health psychology, Clinical Psychology, Adults.

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ABSTRACT

Thwarted belongingness (TB), conceptualized by Joiner's Interpersonal Theory of Suicide arises from a persistent perception of social disconnection. Individuals experiencing TB may adopt unhealthy coping mechanisms such as alcohol use, as mentioned in the Self-Medication Hypothesis. While Physical Activity (PA) often acts as a protective factor against various psychological issues, its role in moderating the TB-alcohol use relationship remains unclear. This cross-sectional study constituted 182 Indian adults (18 - 44 years old), recruited using convenience sampling. Participants completed the INQ-15(TB), AUDIT (alcohol use) and IPAQ-SF (PA) measures. Statistical analyses included a t-test, and Pearson's correlation, Linear Regression analysis, and moderation analysis. Results revealed that Higher TB significantly associated with increased alcohol use. However, PA did not show any association between TB or alcohol use, nor did it moderate the TB-alcohol use link. These findings suggested that individuals experiencing TB may be at a greater risk for alcohol use, which supports both Joiner's theory and the Self-Medication hypothesis, while challenging assumptions about PA as a protective factor. Future studies may employ longitudinal methods, and further evaluate the complex association of physical activity on their relationship.

INTRODUCTION

Adolescence to Adulthood is the most critical period in one's life as it constitutes significant dramatic changes and challenges in different life domains (Patrick et al., 2020). Especially during this time frame, young adults are at a higher risk for mental health problems, predominantly alcohol use (Jurewicz, 2015). A wide variety of studies are being published day by day regarding how the young population is affected by the usage of alcohol and its adverse effects, but the adults as such consisting of the entire population are most of the time left out.

As generations evolve and more and more populations are added to the entire world, the number of people constituting the adult population is whereby increasing rapidly. As the population in the group increases, the problems associated will also increase. Of all such problems, one that stand out among them would be alcohol use. The National Institute of alcohol abuse and alcoholism states that alcohol misuse is increasing among the adult population, especially women also older adults are more sensitive to the use of alcohol compared to the younger ones, including the negatively affecting cognition and mental health.

Considering the Indian subcontinent, Alcohol consumption is particularly the most common practice in India these days, regardless of gender or age. Considering the population of Adults, it is more of a significant public health concern than just numerical. According to the World Health Organization (WHO), in 2019, the average global alcohol consumption per capita was approximately 8.4 liters of pure alcohol per adult. This figure can reflect a significant public health concern as alcohol consumption is linked to various health risks and social issues (World Health Organization: WHO, 2024b). It is unfortunate to see that as time progresses an increasing number of the Young adult population of India fall into the hazardous pattern of drinking. Around 160 million people in India consume alcohol, of which 22% of men and 1% of women fall between the ages of 15 and 49. The percentage of drinkers who constitute under the age of 21 has subsequently increased from 2% to more than 14% in the last 15 years (Prasad, 2009). Which in turn supports the need to study.

These Alcohol consumptions can stem up from various reasons, According to the Interpersonal theory of suicide (Van Orden et al., 2010) Social disconnection or Thwarted belongingness leads to maladaptive coping strategies like

Alcohol use. Thwarted belongingness (TB), a psychologically unpleasant feeling that emerges when the underlying need for connection, known as the "need to belong," is not satisfied, is linked to alcohol consumption in youth. (Van Orden et al., 2012); . People who feel thwarted belongingness may consider to opt alcohol use as a coping mechanism which whereby facilitates them to engage in excessive consumption of alcohol leading to problematic drinking behavior. According to Carol Chu et al The view indicates that suicidal desire originates when individuals suffer persistent feelings of perceived burdensomeness and thwarted belongingness and those near-fatal or fatal suicide behaviors occur in the context of suicidal wishes and compatibility with suicide. (Chu et al., 2017).

The Self Medication Hypothesis (Khantzian, 1997) suggests that Alcohol is used as a means to alleviate emotional distress stemming from social isolation and lack of belonging Parallel to it acting like a stress coping mechanism in reference to the Stress coping model by Lazarus and Folkman's (Biggs et al., 2017). It suggested that TB may increase alcohol use due to its role in stress and maladaptive coping mechanisms highlighting the importance the addressing it's relationships.

There is an increasing number of literature daily that says the benefits of physical activity (PA) on mental health. Studies have shown that physical activity contributes to more positive effects on severe mental illnesses such as schizophrenia, it can improve sleep, and has shown that individuals with alcohol dependence syndrome when combined hand in hand with physical activity and medications enhance their motivation to battle addiction by decreasing cravings (Mahindru et al., 2023). These findings provides insight that physical activity supposedly acts as a protective factor. However, some studies imply the exact opposite findings such that younger adults who engage in vigorous physical activity may also be more likely to use alcohol compared to older adults (Lisha et al., 2011). As there are contradictory findings, it would be a necessity to learn about the impact physical activity has had on alcohol use and thwarted belongingness.

Feeling disconnected from those around you might lead to unhealthy ways of coping, including a rise in drinking habits. This research examines the correlation between thwarted belongingness, alcohol consumption, and the moderating effect of physical activity on this relationship. Given that alcohol misuse, particularly among adults, pose a

considerable public health issue, this investigation aims to elucidate how elements like thwarted belongingness and physical activity interplay in the current context. In addition, it is capable of aiding medical professionals in crafting relevant intervention techniques by highlighting the links among these variables. The study is also relevant because excessive alcohol consumption or lack of physical activity can lead to a variety of lifestyle diseases; understanding the relationship can help contribute to a larger effort to promote healthier lifestyles among young adults.

Research Gap

- While many studies examined Alcohol use among Adults, the specific impact of thwarted belongingness is underexplored.
- The influence of physical activity on the relationship between thwarted belongingness and alcohol use has not being adequately explored.
- The existing literatures examines the influence of other social factors or physical activity on alcohol use alone, and an integrated view of these variables to understand how they interact and influence one another is not known yet.
- Specificities in assessing all three variables were not performed considering the Young adults and Middle aged Adults.

Method

The aim of this study is to address these shortcomings by exploring the interactions between thwarted belongingness and alcohol use among adults.. It also seeks to explore the role of physical activity in moderating this relationship by considering how it differs in terms of different Age groups.

Hypothesis

- H01: There is no significant age differences in Thwarted Belongingness On Alcohol Use Among Adults.
- H02: There is no significant relationship between Thwarted belongingness on alcohol use among Adults.
- H03: There is no significant relationship between Thwarted belongingness and physical activity among Adults.
- H04: There is no significant association between physical activity and alcohol use among adults.
- H05: There is no significant impact of Thwarted belongingness on alcohol use among Adults.
- H06: There is no significant moderating effect of physical activity between Thwarted belongingness on alcohol use among Adults.

Research Design

This study adopted a quantitative cross-sectional research methodology, utilizing Google Forms as a tool for gathering data from participants concerning thwarted belongingness, alcohol consumption, and physical activity.

Sampling

The participants were recruited through convenience sampling via online platform such as Google forms shared on social media platforms such as Instagram and WhatsApp groups .The survey link was distributed to approximately 500 participants, resulting in response rate of 36.4% (182 participants).

Inclusion and Exclusion

Inclusion Criteria

- I. Participants belonged to age 18-44, of which the young adult constituted from 18 years-25 years and adults constituting 26 years-44 years who were willing to participate.
- II. Participants from all over India were included

Exclusion Criteria

- I. Participant with Alcohol use disorder were excluded
- II. Participants with active diagnosis of any other mental illnesses were excluded.
- III. Participants who were Intellectually disabled were

exempted

IV. Participants are physically disabled.

Procedure

Data was collected using online survey distributed through Google Forms. Participants were recruited using convenience sampling, primarily through social media platforms and email invitations. The link to the survey had an informed consent form explaining the research purpose, methods, risks, and emphasizing that participation was voluntary. Once consent was provided, participants were requested to complete the survey containing three validated instruments: the Interpersonal Needs Questionnaire (INQ-15) to measure thwarted belongingness, the Alcohol Use Disorders Identification Test (AUDIT) to quantify alcohol use patterns, and the International Physical Activity Questionnaire Short Form (IPAQ-SF) to quantify levels of physical activity. Participants completed the survey anonymously, and their responses were recorded automatically in a secure online database.

Tools For The Study

1. Interpersonal Needs Questionnaire (Inq-15)

INQ-15 is a questionnaire for self-reports to measure thwarted belongingness (TB) and Perceived Burdensome (PB) (Van Orden et al., 2012). It is a 15 item questionnaire with 9 thwarted belongingness and 6 measures perceived burdensome. It has a good internal consistency with Cronbach's alpha 0.83(Pandia et al., 2022). It is scored under 7 point Likert scale ranging from "1=Not at all true to me" to "7=very much true to me". Higher score on the thwarted belongingness item indicate a greater perception of social disconnection.

2. Alcohol Use Disorder Identification Test (Audit)

AUDIT is a tool that was developed by WHO (World health organization) In 1982. It is a 10-item tool that covers various domains including consumption of alcohol, alcohol drinking behaviour and alcohol-related problems. The 10 questions have 3 options each. Each item is rated 0 to 4, total 0-40 ranges. A score of 8 or above means harmful or hazardous alcohol use. The AUDIT is very highly internally reliable, with Cronbach's alpha of 0.92 in an Indian sample(Endsley et al., 2017).

3. International Physical Activity Questionnaire Short Form(Ipaq-Sf)

IPAQ-SF is a self-report questionnaire to measure physical activity, i.e., walking, moderate, and vigorous, in the previous week. It is applicable in adults between 15-69 years (Tierney et al., 2015).The tool provides a categorical score (low, moderate, high) and a continuous score (MET-minutes/week) to estimate the level of physical activity(Lee et al., 2011).IPAQ-SF has been found to correlate moderately with accelerometer data for MVPA, with correlation coefficients ranging from 0.43 to 0.56 in different studies, showing moderate validity for measuring MVPA (Lee et al., 2011).

Statistical Analysis

Statistical analysis will be carried out using Jamovi software (version 2.0). A t-test was conducted to explore the age differences in Thwarted belongingness and Alcohol use. Pearson's correlation analysis was conducted to examine the relationships between Thwarted Belongingness , Physical Activity and Alcohol use.To determine the impact of Thwarted Belongingness on Alcohol use Linear Regression analysis was employed. A Moderation analysis was conducted to evaluate whether physical activity influenced the relationship between thwarted belongingness and alcohol use.

RESULTS

Table 1a.

Independent Samples T-Test					
		Stati stic	df	p	Mean difference
					SE difference

Thwarted Belongingness	Student's t	-0.608	180	0.544	-1.01	1.66
Note. $H_0: \mu_{18-25} = \mu_{26-44}$						

Table 1b.

Assumptions: Homogeneity of Variances Test (Levene's)				
	F	df	df2	p
THWARTED BELONGINGNESS	1.89	1	180	0.170
Note. A low p-value suggests a violation of the assumption of equal variances				

Table 1a and 1b shows no significant age difference in thwarted belongingness across two age groups (18-25 and 26-44), with t value of -0.608 and p p-value of 0.544. This suggests that age does not significantly influence thwarted belongingness among adults. Accordingly, this finding supports the H01 hypothesis, indicating thwarted belongingness is a pervasive issue across different adult age groups, rather than being limited to younger or older adults.

Table 2.

Correlation Matrix				
		Thwarted Belongingness	Audit Total	Physical Activity
Thwarted Belongingness	Pearson's r	—		
	df	—		
	p-value	—		
Audit Total	Pearson's r	0.388***	—	
	df	180	—	
	p-value	<.001	—	
Physical Activity	Pearson's r	-0.066	0.034	—
	df	180	180	—
	p-value	0.377	0.648	—
Note. * $p < .05$, ** $p < .01$, *** $p < .001$				

Correlation analysis as depicted by table 2 of the research showed a positive moderate correlation between alcohol consumption and thwarted belongingness ($r=0.388$, $p<0.001$). The positive correlation indicates that individuals with greater thwarted belongingness tend to increase alcohol consumption as a coping mechanism to emotional pain. Hence, H02 is not accepted, substantiating the fact that thwarted belongingness has a significant effect on alcohol consumption among adults.

In examining the relationship between thwarted belongingness and physical activity, the results indicated no significant correlation ($r=-0.066$, $p=0.377$). This suggests that feelings of thwarted belongingness do not significantly affect the levels of physical activity among adults. Therefore, H03 is not supported by the data, indicating that other factors may be influencing physical activity levels beyond thwarted belongingness.

Similarly, the analysis showed no significant correlation between physical activity and alcohol use ($r=0.034$, $p=0.648$), Suggesting that engaging in physical activity does not have a direct impact on reducing alcohol consumption among adults. Hence, H04 is also not supported, indicating that physical activity alone may not influence alcohol use.

Table 3a.

Linear Regression :Model Fit Measures		
Model	R	R ²
1	0.388	0.150
Note. Models estimated using sample size of N=182		

Table 3b.

Model Coefficients - AUDIT TOTAL				
Predictor	Estimate	SE	t	p
Intercept	-2.034	1.7676	-1.15	0.251
THWARTED BELONGINGNESS	0.313	0.0554	5.64	<.001

The linear regression analysis indicated by table 3a and 3b showed a significant impact of thwarted belongingness on alcohol use among adults, as evidenced by a positive regression coefficient ($B = 0.313$, $SE = 0.0554$, $t = 5.64$, $p < .001$). This suggests that higher levels of thwarted belongingness are associated with increased alcohol use, as measured by the AUDIT total score. The model portrays 15% of the variance in alcohol use ($R^2 = 0.150$).Being statistically significant relationship, the null hypothesis (H05), which stated no significant impact of thwarted belongingness on alcohol use, is rejected.

Table 4:

Moderation Estimates				
	Estimate	SE	Z	p
THWARTED BELONGINGNESS	0.315	0.0571	5.512	<.001
PHYSICAL ACTIVITY	2.67e-4	3.28e-4	0.814	0.416
THWARTED BELONGINGNESS * PHYSICAL ACTIVITY	-1.18e-5	2.80e-5	-0.422	0.673

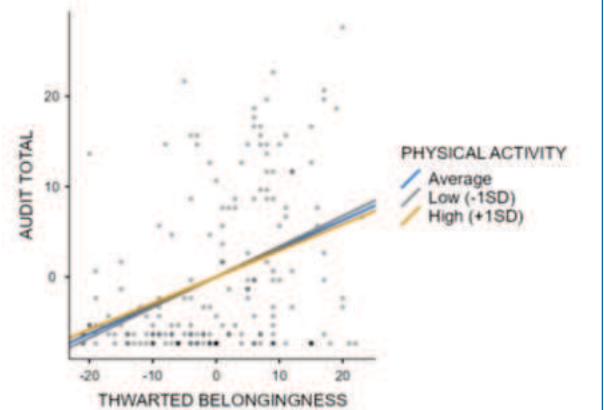


Figure 1: Simple Slope Plot

Finally while analyzing the moderating role of physical activity between thwarted belongingness and alcohol use, the analysis did not yield significant results indicating moderation. The interaction between (THWARTED BELONGINGNESS * PHYSICALACTIVITY) has a no significant coefficient ($B = -1.18e-5$, $SE = 2.80e-5$, $Z = -0.422$, $p = 0.673$), indicating that physical activity does not influence the relationship between thwarted belongingness and alcohol use. Additionally, physical activity alone is not a predictor of alcohol use ($B = 2.67e-4$, $SE = 3.28e-4$, $Z = 0.814$, $p = 0.416$). However, thwarted belongingness remains a predictor ($B = 0.315$, $SE = 0.0571$, $Z = 5.512$, $p < .001$), reinforcing its independent effect on alcohol use. Given the non-significant interaction effect, the null hypothesis (H06) stating that there is no significant moderating effect of physical activity is negated.

DISCUSSION

This study aimed to explore the relationship between Thwarted Belongingness (TB), alcohol use and Physical Activity (PA) among Indian Adults, addressing a gap in understanding how these factors interact. The findings revealed that higher levels of thwarted belongingness were linked to increased alcohol use. This was found to be in congruence with Joiner's Interpersonal Theory of Suicide (Joiner, 2005; (Van Orden et al., 2010)), “which states TB can lead people toward behaviors that offer short-term relief but have long-term risks”. It also aligns well with the stress-coping model (Lazarus & Folkman, 1984; (Biggs et al., 2017)), where individuals encountering social stress, such as isolation, may turn to unhealthy coping methods like alcohol use.

However, Physical Activity did not significantly impact the relationship between thwarted belongingness and alcohol use. This suggests that PA may have complex nature on how individuals use it as a coping mechanism. People differ in how they utilize PA as a coping method—for some exercise may reduce stress or provide social interaction, while others may not experience the same benefits. Additionally, as stated by Reiner, “Other factors like personality, mental health, or life stress could also play a bigger role” (Reiner et al., 2013).

The study also found that Physical Activity (PA) did not significantly alter the relationship between Thwarted Belongingness (TB) and alcohol use. TB clearly influenced alcohol use, but PA did not appear to have a substantial impact. This result was unexpected, as some studies suggest PA can aid in coping with stress. One reason could be that alcohol provides quick relief from distress, whereas the benefits of PA take longer to manifest. In some cases, individuals who engage in high physical activity also consume more alcohol (Kopp et al., 2015); (Sussman et al., 2011)), illustrating that the association between PA and alcohol use is quite complex. Research on this topic has been extensive; some studies support the effectiveness of PA, while others find minimal impact. Thus, it may not be sufficient on its own, especially when broader social and environmental factors are involved.

In general, the relationship between TB and alcohol consumption was relatively linear, but the role of PA in this relationship remains to be explained in greater detail. These findings indicate that it is essential to study these factors among different populations and other influencing elements. Future studies must investigate these associations in greater depth to design more effective interventions to prevent alcohol consumption among vulnerable populations.

CONCLUSION

Limitations

The present study relied on self-reports, which indicated that responses may not be completely accurate and participants may be prone to misreporting their alcohol consumption and Physical Activity (PA) levels; potentially creating bias in the results. Some participants may have underreported their alcohol intake for stigma reasons, further skewing the results. Since this is a cross-sectional study, it provides only a snapshot of the relationship between Thwarted Belongingness (TB), alcohol use, and PA; it does not demonstrate how these factors may change over time, nor which component influences which. The findings could be less valid, given that all subjects are from India, and similar research in other cultures may lend more validation to the results obtained.

The study did not address factors such as social support, resilience, and coping strategies that may aid in creating a concrete relationship. These factors would affect how TB relates to alcohol use; thus, future studies must adopt a more holistic view and include these variables. Additionally, the sample size was too small to detect minor yet meaningful moderation effects of PA. A larger sample could enhance clarity of results which would in turn help determine if PA plays any role in the relationship.

Future Research Suggestions

Future studies should include objective measures such as using fitness trackers or medical tests, to obtain accurate data, as the current study only relied solely on self-report measures. Alcohol use can also be evaluated in more casual manner, which might reduce the participant's discomfort. As the present study only provided a snapshot of the relationships within the population, a longitudinal study could provide a clearer picture. Given that alcohol use and PA can be influenced by cultural norms, socioeconomic backgrounds, and lifestyles differences, future studies should

include more diverse groups. Further research should explore intervention studies or even mix qualitative and quantitative methods to gain better perspectives about real-life experiences. Exploring whether structured PA programs, social support systems, or mental health interventions help reduce alcohol use in individuals who experience TB could also provide valuable insight. Understanding what helps could yield better approaches in the prevention and treatment of alcohol use among those struggling with TB.

Research Ethics

Informed consent was obtained from all participants, and their confidentiality was strictly maintained. Participants were fully briefed about the study prior to their involvement.

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