**The Impact of Cognitive Behavioural Therapy Counselling on the Mental Health of Middle-aged Women in Myanmar**

Abstract

In Myanmar, middle-aged women face a range of social, cultural, and economic challenges, from caregiving responsibilities and traditional gender norms to political instability and limited access to mental health services), a mixed-method approach to mental health was used in 20 middle-aged women in urban and rural settings. Symptoms of anxiety, depression, stress, and trauma were assessed before and after counseling using quantitative measures (e.g., GAD-7, PHQ-9, DASS-21, PCL-5), and qualitative interviews provided a more in-depth picture.

Results showed that there were significant reductions in anxiety, depression, stress, and trauma following the counseling, with many participants’ symptoms changing from moderate to severe, mild, or mild after the intervention, and that while problem-solving increased participants’ emotional resilience and autonomy, there were also some barriers, such as stigma, financial constraints, lack of trained counselors, and limited access to services in rural areas. A culturally sensitive approach that integrates local attitudes, family involvement, and social networks to reduce stigma and acceptance.

Overall, the study suggests the effectiveness of adapted cognitive behavioral therapy in improving mental health among middle-aged women in Myanmar. Larger sample sizes and longer follow-up periods are needed to better understand the long-term impact of counseling on this vulnerable group.

Keywords

Cognitive Behavioral Therapy (CBT), Counseling, Middle-Aged Women, Mental Health, Anxiety, Depression, Stress, Trauma, Psychological Well-Being, Empowerment, Socioeconomic Barriers

1. Introduction

The demand for mental health support and advice has increased globally in the past decade, particularly in places like Myanmar, where economic instability, political change and natural disasters have placed additional pressures on communities (Htay et al., 2020). Communities are struggling with unique social, familial and personal pressures. In Myanmar, these women are often balancing caregiving, domestic work and cultural obligations, which can lead to increased stress, anxiety and depression. Despite these clear needs, middle-aged women in Myanmar remain an underrepresented group in mental health research. Historically, researchers have focused on childhood, adolescence and old age, leaving significant gaps in our understanding of mental health services, ageing and adulthood. Current policy changes have the potential to improve mental health services by tailoring interventions to Myanmar’s diverse cultural and sociopolitical environment.

Evidence suggests that general mental health problems, particularly depression and anxiety disorders, continue to increase in Myanmar, and while data on people are not in refugee camps or border areas are limited, community surveys do not show clear evidence of mental health problems leading to high levels of unmet needs (Kyaw et al., 2023). The vulnerability of vulnerable populations highlights the importance of strengthening services for vulnerable groups such as immigrants and migrants. Counselling, particularly cognitive behavioural therapy (CBT), has shown promise in addressing these issues. By providing a structured but adaptive approach, CBT can help midlife women identify negative thought patterns and develop coping strategies. The value of counselling for different populations and the specific impact of counselling on middle-aged women in Myanmar have not yet been studied.

This study explores how counselling, and specifically CBT, can support the mental health, resilience and empowerment of middle-aged women in Myanmar. Through a review of relevant literature and an analysis of qualitative data, this study identifies contextual barriers, cultural perspectives, and specific approaches needed to improve counseling services for this often-overlooked population. The goal of this research is the findings aim to illuminate a more diverse and culturally sensitive approach to mental health services, contributing to both local policy development and a broader debate in Psychology field.

1. Literature Review

A growing body of research underscores the complex mental health challenges faced by middle-aged women in Myanmar, shaped by socio-political upheavals, recurring natural disasters, and enduring economic uncertainties (Institute for Health Metrics and Evaluation, 2017; Williams & Nguyen, 2023). Traditionally, academic inquiries have focused on the mental health of adolescents and the elderly, leaving a conspicuous gap in understanding the unique vulnerabilities of adults in mid-life (Patel & Singh, 2021). Middle-aged women in Myanmar, typically between 40 and 60 years of age, often find themselves at the nexus of family caregiving responsibilities and socio-cultural expectations, which can exacerbate stress, depression, and anxiety (Smith & Jones, 2020).

In Southeast Asian contexts, middle-aged women commonly shoulder the dual role of providing care for both children and aging relatives, particularly in rural settings where economic infrastructure remains underdeveloped (Garcia & Kim, 2019). Myanmar’s patriarchal norms frequently expect women to prioritize collective family well-being over personal self-care, contributing to a cultural tendency to suppress mental health concerns (Williams & Nguyen, 2023). This “sandwich generation” dynamic intensifies emotional stress, often manifesting as chronic anxiety and depressive symptoms when compounded by societal stigmas against seeking professional help (Patel & Singh, 2021).

Within this landscape, counseling—especially in the form of Cognitive Behavioral Therapy (CBT)—has emerged as a promising mode of intervention. Studies from culturally similar environments in Thailand, Cambodia, and Vietnam reveal that CBT can significantly reduce depressive and anxiety-related symptoms when adapted to local customs and linguistic nuances (Garcia & Kim, 2019). In Myanmar, however, most mental health services are concentrated in urban centers, rendering access difficult for those in rural areas—where health facilities and trained professionals are limited (Institute for Health Metrics and Evaluation, 2017). In addition, lingering political and economic instability contributes to an underdeveloped mental health infrastructure, a situation that disproportionately affects women with low income or limited mobility (Smith & Jones, 2020).

Beyond the modality of treatment, existing literature emphasizes the critical importance of a strong therapeutic alliance (Baldwin et al., 2007; Horvath & Bedi, 2002; Paul & Charura, 2014). Lambert and Barley (2002) argue that outcomes in psychotherapy are influenced more by relational factors—such as empathy, warmth, and genuine engagement—than by any specific therapeutic technique. In the Myanmar context, cultural sensitivity plays a pivotal role in nurturing trust, a finding supported by qualitative studies in similar Southeast Asian communities (Manthei, 2007; Oliveira et al., 2012). Women who perceive their counselor as empathetic, non-judgmental, and appreciative of local practices are more likely to engage fully with the therapy process, leading to sustained improvements in self-esteem, emotional regulation, and family dynamics (Patel & Singh, 2021).

Despite counseling’s demonstrated benefits, socio-cultural and structural barriers persist. Limited outreach in rural areas, pervasive stigma surrounding mental health, and logistical hurdles such as travel costs and time constraints hamper women’s ability to seek and continue therapy (Williams & Nguyen, 2023). Moreover, many middle-aged women remain unconvinced of the efficacy of Western-derived interventions unless they are perceived as culturally congruent (Garcia & Kim, 2019). Future efforts should thus focus on developing community-based counseling programs that integrate traditional healing practices, involve family support systems, and provide financial or logistical incentives for service utilization.

Collectively, the literature indicates that while middle-aged women in Myanmar face distinctive psychological burdens, culturally adapted counseling—particularly CBT—can significantly improve outcomes if delivered with sensitivity to local beliefs and socio-economic constraints. Further research involving longitudinal studies and expanded sample sizes would help clarify best practices in tailoring these interventions to Myanmar’s evolving cultural and political contexts, ultimately informing robust policy actions and more equitable mental health care.

1. Data and Methodology

3.1 Study Design

This study adopted a mixed-methods approach, integrating both quantitative and qualitative data collection to evaluate how counseling—particularly Cognitive Behavioral Therapy (CBT)—influences the mental health of middle-aged women in Myanmar. A combination of surveys and in-depth interviews was used to capture a broad range of information, including pre- and post-counseling measures of anxiety, depression, and stress, as well as personal narratives about lived experiences. The inclusion of quantitative methods allows for statistical analysis of counseling effectiveness, while qualitative interviews offer deeper insights into individual perceptions and cultural nuances.

3.2 Participants and Sampling

3.2.1 Target Population

The study focuses on middle-aged women (aged 40–60 years) in Myanmar who have received counseling services in the last two years. This age group was selected due to the unique socio-cultural pressures experienced during mid-life, including caregiving responsibilities, economic challenges, and evolving family roles.

3.2.2 Sample Size and Composition

A total of 20 middle-aged women from diverse regions—encompassing both urban and rural areas—participated in the study. This diversity was sought to capture variations in cultural practices, economic conditions, and geographic constraints. Although a larger sample of up to 150 participants was initially considered, the final sample of 20 allowed for more detailed, in-depth qualitative exploration alongside quantitative assessments.

3.2.3 Selection Criteria

Age Range: 40–60 years (to align with the commonly accepted definition of middle-aged women).

Counseling History: Participation in one or more counseling sessions within the past two years, which could involve individual therapy, mental health programs, or community-based counseling.

Geographic Diversity: Participants were drawn from both urban centers (e.g., Naypyitaw) and rural communities to ensure a representative view of regional differences in access and attitudes toward mental health services.

3.2.4 Sampling Method

A purposive sampling strategy was employed to recruit women who fit the above criteria. Collaboration with local health clinics, community organizations, and mental health professionals facilitated the identification of eligible participants. Local media announcements and community bulletin boards were also used to broaden outreach.

3.3 Data Collection Methods

3.3.1 Quantitative Surveys

Participants completed standardized questionnaires before and after counseling to measure changes in mental health status and overall well-being. Instruments included:

* Generalized Anxiety Disorder Scale (GAD-7) for anxiety.
* Patient Health Questionnaire (PHQ-9) for depression severity.
* Depression, Anxiety, and Stress Scale (DASS-21) or Post-Traumatic Stress Disorder Checklist (PCL-5) for stress and trauma, where applicable.
* Client Satisfaction Survey and a CBT Efficacy Scale (where relevant) to gauge therapy-related satisfaction, coping improvements, and perceived cultural sensitivity.

Surveys were administered in Burmese or in local dialects if necessary. Likert scales (e.g., 1 = “Strongly Disagree” to 5 = “Strongly Agree”) were used to quantify symptoms, coping skills, and satisfaction levels.

3.3.2 Qualitative Interviews

In-depth interviews were conducted with both middle-aged women and the mental health professionals who counseled them. These semi-structured interviews explored personal histories, cultural beliefs, family dynamics, and experiences of counseling. The qualitative component provided rich contextual data on how social norms and individual beliefs influence mental health outcomes and counseling efficacy. Interviews were recorded, transcribed, and later translated to English when necessary.

3.3.3 Demographic and Background Information

To contextualize the findings, participants provided demographic data—such as age, marital status, employment, and educational background—and brief details about their counseling history (e.g., number of sessions, type of therapy received). This information was used to examine correlations between demographic factors and mental health outcomes.

3.4 Role of Counselors and Professional Expertise

An essential part of this study involved collaboration with trained mental health professionals, exemplified by a lead counselor (e.g., “May Cho”) who specializes in trauma-informed, culturally sensitive CBT. The counselors maintained a client-centered approach, adapting therapeutic strategies to local values and traditions. They also contributed to data collection by administering standardized assessments, tracking behavioral observations, and noting client progress throughout the counseling process.

3.5 Ethical Considerations

All research activities adhered to ethical guidelines to safeguard participant well-being:

* Informed Consent: Participants were briefed on the study objectives, procedures, risks, and potential benefits. They signed consent forms acknowledging their voluntary participation and the option to withdraw at any time without consequence.
* Confidentiality: Anonymized identification codes replaced personal details to protect participant privacy. Interviews and survey data were stored securely, with access limited to the principal researchers.
* Referral Mechanisms: Participants who exhibited severe distress during or after the study were referred to additional mental health services or specialized professionals for further support.
* Cultural Sensitivity: The study design and data collection instruments were vetted for cultural appropriateness, ensuring respect for local norms and linguistic variations.

3.6 Data Analysis

3.6.1 Quantitative Analysis

Survey responses were entered into a statistical software package (e.g., SPSS, R) for descriptive and inferential analyses. Pre- and post-counseling scores for anxiety, depression, and stress were compared using paired t-tests or ANOVA to determine statistically significant changes in mental health status. Demographic correlations were explored through regression or chi-square tests, where applicable, to identify factors influencing counseling outcomes (e.g., urban vs. rural residence).

3.6.2 Qualitative Analysis

Interview transcripts were subject to thematic analysis, involving data coding and the development of categories that captured recurring patterns (e.g., stigma, caregiving burden, empowerment). These themes were then cross-referenced with quantitative findings to construct a holistic understanding of how cultural context, personal experiences, and counseling interventions intersect.

3.7 Rationale and Strengths of the Methodology

The mixed-methods framework provides a comprehensive lens—combining numerical assessments of symptom changes with in-depth narratives about lived experiences. By drawing on multiple data sources (surveys, interviews, demographic profiles, and counselor reports), the study ensures triangulation, enhancing both reliability and validity. Furthermore, the inclusion of trained mental health professionals as collaborators strengthens the clinical relevance of the findings, offering real-world insights into counseling processes and barriers in Myanmar.

1. Empirical Results

This section presents the quantitative and qualitative findings derived from the study, focusing on the pre- and post-counseling assessments of anxiety, depression, stress, and trauma, as well as client satisfaction and follow-up data. The results are based on standardized scales (GAD-7, PHQ-9, DASS-21, PCL-5), Likert-scale questionnaires, and semi-structured interviews with 20 middle-aged women who received counseling services in Myanmar.

4.1 Demographic Overview

* Participant Profile: The 20 participants (aged 40–60) represented both urban (e.g., Naypyitaw) and rural areas, with occupations ranging from teaching and nursing to small business ownership and homemaking.
* Socioeconomic Status: Most participants fell into low- or medium-income categories; a smaller number reported high-income backgrounds.
* Marital Status: The sample included married, single, widowed, and divorced women, reflecting diverse family structures and caregiving obligations.

This diversity offered a comprehensive view of the economic, cultural, and familial factors influencing mental health needs.

4.2 Pre-Counseling Mental Health Status

4.2.1 Anxiety (GAD-7)

* Severity Distribution:
	+ Severe: 35%
	+ Moderately Severe: 20%
	+ Moderate: 30%
	+ Mild: 15%

Over half of the participants exhibited moderately severe to severe anxiety prior to counseling. Qualitative interviews revealed that caregiving demands and economic instability were common stressors contributing to high anxiety levels.

4.2.2 Depression (PHQ-9)

* Severity Distribution:
	+ Severe: 20%
	+ Moderately Severe: 35%
	+ Moderate: 40%
	+ Mild: 5%

No participants reported minimal depression before counseling. A combined 75% fell into moderate or moderately severe categories, indicating a pressing need for targeted interventions to address depressive symptoms.

4.2.3 Stress (DASS-21)

* Stress Levels:
	+ Severe: 20%
	+ Moderately Severe: 30%
	+ Moderate: 45%
	+ Mild: 5%

Almost half the sample reported moderate stress, with an additional 30% experiencing moderately severe stress. Interviews suggested that juggling family responsibilities, work pressures, and limited personal time were major contributors to elevated stress.

4.2.4 Trauma (PCL-5)

* Trauma Categories:
	+ Severe: 40%
	+ Moderately Severe: 20%
	+ Moderate: 40%

Eighty percent of participants exhibited moderate to severe trauma symptoms, frequently linked to past displacement, domestic conflicts, or flood-related experiences. These findings underscore the cumulative impact of socio-political upheaval, economic instability, and natural disasters on women’s emotional well-being.

4.3 Post-Counseling Mental Health Outcomes

Following a course of counseling—primarily using Cognitive Behavioral Therapy (CBT)—participants were reassessed using the same standardized instruments.

4.3.1 Anxiety Reduction

* Post-Counseling Distribution (GAD-7):
	+ No Severe Cases (0%)
	+ Moderately Severe: 10%
	+ Moderate: 45%
	+ Mild: 35%
	+ Minimal: 10%

Severe anxiety dropped from 35% to 0%, with a corresponding increase in mild and minimal categories (from 15% to 45%). Participants reported better emotional regulation, citing CBT techniques (e.g., cognitive reframing, relaxation exercises) as pivotal in managing worry and stress.

4.3.2 Improvements in Depression

* Post-Counseling Distribution (PHQ-9):
	+ Severe: 0%
	+ Moderately Severe: 15%
	+ Moderate: 20%
	+ Mild: 45%
	+ Minimal: 20%

None of the participants remained in the severe depression category after counseling (down from 20%). The majority (65%) transitioned to mild or minimal depression, indicating substantial improvement. A small subset (15%) continued to experience moderately severe symptoms, suggesting a need for ongoing or more intensive support.

4.3.3 Stress Management

* Post-Counseling Distribution (DASS-21):
	+ Normal: 20%
	+ Minimal: 40%
	+ Moderate: 35%
	+ Moderately Severe/Severe: 5%

Severe stress cases dropped markedly from 20% to just 5%. Additionally, 60% of participants reported either normal or minimal stress levels, reflecting successful application of CBT-based coping mechanisms. Nonetheless, one-third continued to experience moderate stress, highlighting an area for further improvement.

4.3.4 Trauma Recovery

* Post-Counseling Distribution (PCL-5):
	+ No Severe Cases (0%)
	+ Moderate to Mild: 85%
	+ Normal: 10%

Severe trauma declined from 40% to 0%. Although most participants shifted toward mild or moderate trauma symptoms, 30% still exhibited residual challenges, such as hypervigilance and emotional numbness. Qualitative feedback indicated that CBT’s structured approach to reframing traumatic memories was beneficial, but some women recommended extended or specialized trauma-focused sessions.

4.4 Client Satisfaction and Counselor Feedback

A structured client satisfaction survey and open-ended comments shed light on counseling process effectiveness:

1. Overall Satisfaction:
	* Satisfied (4) or Very Satisfied (5): 80%
	* Neutral (3): 15%
	* Dissatisfied (2): 5%
2. Effectiveness in Addressing Issues:
	* Effective (4) or Very Effective (5): 75%
	* Moderately Effective (3): 20%
	* Slightly Effective (2) or Not Effective (1): 5%
3. Cultural Sensitivity:
	* Qualitative narratives revealed that the counselor’s incorporation of local traditions, language, and family involvement was valued. However, some participants in rural areas expressed a wish for more localized examples and longer sessions.
4. Common Themes for Improvement:
	* Longer or more frequent sessions.
	* Additional mindfulness or relaxation techniques.
	* Greater focus on goal-setting and practical strategies for economic or family-related stress.

4.5 Follow-Up Findings

Three months post-counseling, a follow-up assessment (Likert-scale questionnaire plus open-ended queries) indicated:

* Sustained Emotional Well-Being: 85% reported moderate to significant ongoing improvement; 15% noted partial or minimal long-term gains.
* Stress Management: 80% found CBT tools still effective, while 20% desired additional support due to persistent financial or familial pressures.
* Empowerment: 85% felt more confident in decision-making and conflict resolution, underscoring counseling’s role in fostering self-efficacy.
* Cultural Sensitivity: Most participants (90%) were satisfied with how counseling respected their cultural beliefs. A small proportion (10%) suggested further localization, including use of local languages or indigenous coping methods.

4.6 Qualitative Insights

Thematic analysis of interviews revealed several key factors influencing outcomes:

1. Family Dynamics and Caregiving: Many participants struggled to balance caregiving with personal well-being, exacerbating anxiety and stress.
2. Societal Stigma: Fear of judgment or misunderstanding remained a barrier to seeking help, particularly in rural locales.
3. Adaptation of CBT: Incorporation of culturally familiar practices (e.g., mindfulness techniques aligned with Buddhist traditions) enhanced client engagement and perceived relevance.
4. Sense of Control: Clients frequently cited a newfound ability to reframe negative thoughts, leading to improved self-efficacy and better emotional regulation.

4.7 Summary of Findings

* Significant Symptom Reduction: CBT-based counseling yielded notable decreases in anxiety, depression, stress, and trauma, with severe cases diminishing across all four domains.
* High Satisfaction Levels: The majority of participants expressed satisfaction with both the counseling process and counselor empathy, although some called for more diverse intervention techniques or extended session lengths.
* Cultural Relevance and Barriers: While culturally adapted counseling boosted engagement, socio-economic constraints and residual stigma continued to limit full access and sustained improvement for a minority of participants.
* Long-Term Benefits: Follow-up assessments indicated that most positive changes persisted over three months, although certain individuals required extended or more specialized support.

Overall, these empirical results underline the effectiveness of structured counseling interventions in Myanmar’s mid-life female demographic, particularly when tailored to local cultural nuances and delivered with an emphasis on trust, empathy, and client empowerment.

1. Conclusion

This study demonstrates that Cognitive Behavioral Therapy (CBT) is an effective and adaptable intervention for improving the mental health of middle-aged women in Myanmar. Post-counseling assessments revealed notable reductions in anxiety, depression, stress, and trauma, alongside increased feelings of empowerment and well-being. Critically, the results underscore that while CBT can significantly alleviate emotional distress, long-term success hinges on sustained follow-up support, culturally attuned counseling methods, and strategies to overcome the systemic barriers—such as stigma, financial constraints, and limited rural outreach—that impede consistent access to care.

Moreover, the findings highlight the importance of culturally adaptive CBT models tailored to Myanmar’s unique societal and spiritual context. Integrating local practices—like mindfulness techniques grounded in Buddhist traditions—proved instrumental in enhancing client engagement and acceptance. The positive outcomes observed in this study point to the potential of such tailored interventions to foster enduring mental health improvements and a greater sense of personal agency among middle-aged women.

Nevertheless, gaps remain in rural service availability, affordability, and community-based follow-up, suggesting that government bodies, non-governmental organizations, and mental health professionals should collaborate to expand training, reduce stigma, and increase counseling accessibility. By addressing these challenges through culturally responsive frameworks and ongoing professional development, future initiatives can deepen the therapeutic impact of CBT and ensure more comprehensive, sustainable mental health support for women throughout Myanmar.

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**APPENDIX A**

TEST PAIRS= pre counselling WITH post counselling (PAIRED) /CRITERIA=CI(.9500) /MISSING=ANALYSIS.

**T-Test**

|  |
| --- |
| **Notes** |
| Output Created |  |
| Comments |  |
| Input | Active Dataset | DataSet0 |
| Filter | <none> |
| Weight | <none> |
| Split File | <none> |
| N of Rows in Working Data File | 20 |
| Missing Value Handling | Definition of Missing | User defined missing values are treated as missing. |
| Cases Used | Statistics for each analysis are based on the cases with no missing or out-of-range data for any variable in the analysis. |
| Syntax | T-TEST PAIRS=pre counselling WITH post counselling (PAIRED)/CRITERIA=CI (.9500)/MISSING=ANALYSIS. |
| Resources | Processor Time | 00-00-00.00 |
| Elapsed Time | 00-00-00.04 |

[DataSet0]

|  |
| --- |
| **Paired Samples Statistics** |
|  | Mean | N | Std. Deviation | Std. Error Mean |
| Pair 1 | Pre counselling | 3.2375 | 20 | .55816 | .12481 |
| Post counselling | 2.1875 | 20 | .42885 | .09589 |

|  |
| --- |
| **Paired Samples Correlations** |
|  | N | Correlation | Sig. |
| Pair 1 | Pre counsellingpost counselling | 20 | .573 | .008 |

|  |
| --- |
| **Paired Samples Test** |
|  | Paired Differences |
|  |
| Mean | Std. Deviation | Std. Error Mean | 95% Confidence Interval of the Difference |
| Lower |
| Pair 1 | Pre counsellingpost counselling | 1.05000 | .47044 | .10519 | .82983 |

|  |
| --- |
| **Paired Samples Test** |
|  | Paired Differences | t | df | Sig. (2-tailed) |
| 95% Confidence Interval of the Difference |
| Upper |
| Pair 1 | Pre counsellingpost counselling | 1.27017 | 9.982 | 19 | .000 |

Pre counselling Mean- 3.2375

Post counselling Mean- 2.1875

 There is a decrease in the mean score after counseling (from 3.2375 to 2.1875), suggesting a potential effect of counseling.

The standard deviation (variation in data) is slightly higher for pre counseling scores than for post counseling scores, indicating greater variability in the pre counseling scores.

Correlation Coefficient- 0.573

p-value (Sig.)- 0.008

 The correlation between pre counseling and post counseling scores is 0.573, which indicates a moderate positive relationship. The p-value of 0.008 (< 0.05) suggests this relationship is statistically significant.

Mean Difference- 1.05

 The average difference between pre counseling and post counseling scores is 1.05.

t-value- 9.982

This high t-value indicates a strong effect size.

Degrees of Freedom (df)- 19

This is based on the sample size (N = 20, so df = N - 1).

p-value (Sig. 2-tailed)- 0.000

 The p-value is very small (< 0.05), indicating that the difference between pre counseling and post counseling scores is statistically significant.

95% Confidence Interval- The true mean difference lies between 0.82983 and 1.27017 with 95% confidence.

Percentage Effectiveness= (Mean Difference/ Pre counseling Mean) ×100

Pre counseling Mean = 3.2375

Post counseling Mean = 2.1875

Mean Difference = 3.2375 - 2.1875 = 1.05

Percentage Effectiveness=(1.05/ 3.2375) x100 ≈ 32.45%

Counseling Effectiveness is 32.45 %.

**Reading Materials**

Moore, D. S., McCabe, G. P., & Craig, B. A. (2017). Introduction to the Practice of Statistics. W.H. Freeman and Company