



Analysis on the Characteristics of Unemployed or Jobless Young and Middle-aged Adults of Hangzhou Psychological Aid Hotline

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ABSTRACT

Objective: To explore the basic characteristics of young and middle-aged adults who are unemployed or jobless seeking psychological assistance on the hotline.

Methods: Data on general demographic information, types of concerns expressed during calls, and other relevant information were collected from young adults who sought assistance on the hotline in Hangzhou City from 2019 to 2022. The data were grouped and compared based on gender, age groups, and call time. The psychological well-being of the unemployed population was assessed by evaluating depressive symptoms and suicide risk.

Results: A total of 6,297 young adults who were unemployed or jobless seeking assistance were included in the study. Among them, 1.5% expressed suicidal ideation, 1.5% reported having a suicide plan, and 4.2% had engaged in suicidal behaviors. The proportion of severe depression ($P<0.001$), suicidal ideation ($P<0.001$), suicide planning ($P<0.001$), and suicide attempts ($P<0.001$) was higher among males compared to females. In the high-risk group, the proportion of males was significantly higher than females ($P<0.001$). The proportion of severe depression, suicide risk, and high-risk individuals among young adults was significantly higher than that of middle-aged and older adults ($P<0.001$). Significant differences were found in terms of the time of the calls, with a higher proportion of individuals with suicide plans ($P<0.001$) individuals preparing to engage in suicidal behavior ($P<0.001$) high-risk individuals ($P<0.001$) calling during the late night hours compared to the daytime.

Conclusion: Male, young adult group, and individuals calling during the late night hours seeking assistance have relatively poorer psychological well-being and higher suicide risk.

Keywords: Psychological assistance; Psychological hotline; Adults; Unemployment; Jobless; Psychological counseling; Mental health helpline

INTRODUCTION

The unemployment rate in China reached 5.50% in 2022, with an average of 5.16% between 2017 and 2022 [1]. According to the results of the 7th national census, the total population of China is expected to remain above 1.4 billion, with a working-age population of 880 million individuals aged 16-59. Looking at the monthly urban youth unemployment rate for individuals aged 16-24 nationwide, the indicator ranged from 12.7% to 16.2% in 2021 and increased to between 15.3% and 19.9% in 2022. In 2023, the youth unemployment rate for individuals aged 16-24 further increased to 20.4%, indicating a worsen-

ing unemployment situation. At the same time, the estimated number of graduates in 2023 is expected to reach 11.58 million. With a substantial labor force, high unemployment rate, and a considerable number of graduates, the current economic situation cannot meet the demand for employment, resulting in a challenging job market.

The relationship between unemployment and suicide has been proven by various studies. An analysis based on public data from 63 countries worldwide showed that unemployment is associated with a 20%-30% increase in suicide risk [2]. In a press release on March 18, 2020, the International Labour Or-

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ganization stated that the global unemployment rate would increase from 4.936% to 5.64%, leading to an annual increase of approximately 9,570 suicides and around 2,135 additional suicide incidents related to unemployment [3]. According to the World Health Organization (WHO), each suicide in the population is accompanied by over 20 suicide attempts [4].

Some studies suggest that unemployed individuals are more likely to experience poor physical health [5], increased risk of cardiovascular diseases, engage in criminal behavior more frequently, and exhibit unhealthy lifestyle behaviors such as smoking, increased alcohol consumption, and drug abuse [6]. They are also more likely to experience widespread mental health issues such as increased stress, mental illnesses, decreased mental well-being, lower life satisfaction, increased risk of depression, anxiety, and so on [7]. According to the 2021-2022 National Mental Health Development Report of China released by the Chinese Academy of Sciences, various occupational groups show different characteristics in terms of mental health, with the highest risk of depression detected among the group of unemployed individuals, reaching 31.0%, much higher than the detected depression risk among other occupational groups. However, the proportion of this group seeking help and treatment is very low, with main barriers including economic pressure, discrimination and stigma related to mental health issues, embarrassment, and inadequate understanding of mental health problems. Mental health helplines have become an important way for people to access psychological services. At the same time, helplines partially address the barriers that prevent this group from seeking help due to their anonymity, convenience, remote accessibility, and free nature, making them an important service for providing prevention and healthcare services to unemployed or jobless individuals at risk of emotional distress and suicide. The Hangzhou Psychological Assistance Hotline (hereafter referred to as the hotline) provides psychological services to thousands of callers each year. Based on the collected data, this study will explore the basic characteristics of young and middle-aged unemployed or jobless individuals, who contact the helpline, provide evidence-based information on their mental health status, and support targeted intervention services in the future.

METHODS AND OBJECTIVES

Objects

Young and middle-aged individuals generally refer to the youth and middle age stages. According to the World Health Organization's determination of global human physical fitness and average lifespan, youth is defined as 19-35 years old, and middle age is defined as 36-59 years old. Therefore, young and middle-aged individuals are generally considered to be 19-59 years old.

The study will include young and middle-aged unemployed or unemployed individuals who called the hotline from 2019 to 2022 as research subjects. Out of the 7,340 calls received from young and middle-aged unemployed or unemployed individuals, invalid calls, calls lasting less than 2 minutes, duplicate calls, and calls seeking only information were excluded. Finally, a total of 6,297 call records were included in this study. Based on the filtered information, the participants were divided into

three groups: Youth group (aged 19-29), middle-aged youth group (aged 29-39), and middle-aged group (aged 39-59). The participants were further classified into three education levels: "Low education level" for those with elementary school education or below, "medium education level" for those with high school or vocational education, and "high education level" for those with college or above education. This classification will facilitate subsequent data analysis.

Method

The general demographic information (gender, age, education level, marital status, occupation, etc.) as well as the emotional state, suicide risk, and related factors of the callers will be assessed during the consultation process.

Suicide Risk Assessment

Suicide risk assessment includes evaluating suicidal ideation, suicide plans, and suicide attempts in callers. When receiving a call, the hotline operator will ask the caller if they have any thoughts of suicide. If the caller's response is "no," it is considered that they do not have suicidal ideation. If the response is "yes," it is considered that they have suicidal ideation. If the caller admits to having suicidal thoughts, further questions are asked to determine if they have specific plans for suicide. If the response is "no," it is considered that they do not have a suicide plan. If the response is "yes," it is considered that they have a suicide plan. If the caller admits to having a suicide plan, additional questions are asked to assess whether they have engaged in self-harming behaviors to end their life in the past two weeks. If the response is "no," it is considered that they have not engaged in any suicide-related behavior. If the response is "yes," it is considered that they have had a suicide attempt. Furthermore, the caller is asked if they are currently in the process of attempting suicide. If the response is "yes," it is considered that they are currently engaging in suicide behavior.

Mood Assessment

Mood assessment is primarily conducted using a self-developed depression and suicide risk assessment questionnaire. This tool is based on the diagnosis of "major depressive episode" in the Diagnostic and Statistical Manual of Mental Disorders, 4th edition, and has shown good validity and reliability. It has been widely used in hotline work. During the call, the hotline operator engages in a conversation with the caller and asks relevant questions to evaluate their mood. The questionnaire consists of a total of 20 items, with items 14-18 assessing risk factors. Items 14 and 15 are scored as 1 if the response is "yes." Item 16 is scored as 1 if the reported level of hope is $\leq 50\%$. Items 17 and 18 are scored as 1 if there is presence of physical illness, life events, or substance abuse. If the response to items 1 and 2 is "no," it is classified as "no depression." If either item 1 or 2 is present, and there are four items among 1-9, or if item 10 indicates impaired social functioning or item 11 indicates significant distress, it is classified as "mild depression." If either item 1 or 2 is present, and there are 5 to 7 items among 1-9, or if item 10 indicates impaired social functioning or item 11 indicates significant distress, it is classified as "moderate depression." If either item 1 or 2 is present for duration of one week, and there are seven or more items among 1-9, or

if item 10 indicates impaired social functioning or item 11 indicates significant distress, it is classified as “severe depression.”

Categorization of Consultation Issues

Categorization of consultation issues is based on the topics that callers raise during hotline consultations and includes the following categories:

- Physical illness,
- Mental health issues,
- Romantic relationship issues,
- Marital and family issues,
- Sexual issues,
- Parenting and child education issues,
- Work-related issues,
- Interpersonal relationship issues,
- Learning issues,
- Other issues

High-risk Caller Assessment

High-risk caller assessment criteria: High-risk callers are defined as individuals who meet the following conditions:

- Presence of suicidal ideation and specific suicide plans, or
- Presence of suicidal ideation without plans, but a risk factor score of ≥ 5 .

The risk factor score includes factors determined by items 14-18 in the questionnaire, as well as the assigned values for the caller’s mood state, with a score of 1 for moderate depression and 2 for severe depression.

Statistical Methods

Statistical analysis will be conducted using SPSS 26.0 software. Some variables involved in the study may have missing data, resulting in varying numbers of callers for each variable, not encompassing the entire number of callers. Chi-square test was

used to compare the differences between unemployed or jobless young and middle-aged callers based on gender and age groups. Additionally, pairwise comparisons were conducted on the mental health of callers at different time. The significance level was set at two-sided $P < 0.05$.

RESULTS

General Characteristics of Unemployed or Jobless Young Adults Callers

Among 6,297 unemployed or jobless callers, there were 2,424 males (38.5%) and 3,873 females (61.5%). The hotline calls were received from across the country, with 32.3% of calls originating from the local area. Calls during the daytime (7-18 hours), first half of the night (19-23 hours), and second half of the night (0-6 hours) accounted for 45.2%, 32.4%, and 22.4% of the total calls, respectively. In terms of age distribution, the youth group, middle youth group, and middle-aged group accounted for 44.9%, 34%, and 21.2% of the total calls, respectively. Mental and psychological issues were the main concerns for this group, accounting for a significant proportion of 70.2%. Regarding marital status, the majority of this group was unmarried, accounting for 65%.

Comparison of Basic Characteristics of Unemployed or Jobless Callers based on Gender

There were significant differences between male and female callers in terms of age distribution, regional distribution, education level, time of call, and marital status. The proportion of low education level was higher among male callers compared to female callers. The proportion of male callers in the youth group was higher than that of female callers, while in the middle-aged group, the proportion of female callers was higher than that of male callers. Among male callers, the proportion of married individuals was higher than that of unmarried individuals, while among female callers, the proportion of married individuals was higher than that of male callers, with a significantly higher frequency of divorced female callers. The proportion of male callers making calls during the second half of the night was higher than that of female callers (Table 1).

Table 1: Comparison of basic characteristics of unemployed or jobless callers based on gender [PCS (%)]

Variable	Total (n=6297)	Male (n=2424)	Female (n=3873)	X ²	P
Call time	Comparison	Comparison	Comparison	Comparison	Comparison
Daytime	2845 (45.2%)	993 (41%)	1852 (47.8%)	45596	<0.001
First half of the night	2042 (32.4%)	788 (32.5%)	1254 (32.4%)		
Second half of the night	1410 (22.4)	643 (26.5%)	767 (19.8%)		
Education level					
Low	1056 (18.8%)	560 (26.4%)	496 (14.3%)	136284	<0.001
Medium	2043 (36.5%)	652 (30.7%)	1391 (40%)		
High	2504 (44.7%)	911 (42.9%)	1593 (45.8%)		
Age group					
Youth	2825 (44.9%)	1271 (52.4%)	1554 (40.1%)	150958	<0.001
Middle-aged Youth group	2139 (34%)	818 (33.7%)	1321 (34.1%)		
Middle-aged group	1333 (21.1%)	335 (13.8%)	998 (25.8%)		

Marital status					
Married	1012 (16.4%)	235 (9.9%)	777 (20.4%)	425.569	<0.001
Single	4094 (66.3%)	1937 (81.9%)	2157 (56.6%)		
Divorced or widowed	1073 (17.4%)	193 (8.2%)	880 (23.1%)		
Region					
Hangzhou	2032 (32.5%)	463 (19.2%)	1569 (40.8%)	344.54	<0.001
Zhejiang province	1108 (17.7%)	433 (18%)	675 (17.5%)		
Other province	3120 (49.8%)	1514 (62.8%)	1606 (41.7%)		

Comparison of Types of Calls from Unemployed or Jobless Callers Based on Gender

There were significant differences between male and female callers in terms of the main issues they sought counseling for through the hotline. Male callers had a higher proportion of

inquiries related to mental and psychological issues, sexual issues, and work-related issues than female callers. On the other hand, female callers had a higher proportion of inquiries related to romantic relationships, marriage and family issues, child education issues, and interpersonal relationship issues (Table 2).

Table 2: Comparison of type of calls from unemployed or jobless callers based on gender [PCS (%)]

Consultation issues	Total (n=6297)	Male	Other province	Other province	Other province
(n=242)	Female	Other province	Other province	Other province	Other province
(n=3873)	X2	P	Other province	Other province	Other province
Physical illness	75	39	36	12.23	<0.001
Mental health issues	4417	1711	2707	652.24	<0.001
Romantic relationship issues	347	127	220	53.33	<0.001
Marital and family issues	578	131	447	145.32	<0.001
Sexual issues	32	28	4	20.93	<0.001
Parenting and child educational issues	48	3	45	23.81	<0.001
Work related issues	267	142	125	45.08	<0.001
Interpersonal relationship issues	155	48	107	28.06	<0.001
Learning issues	41	21	20	6.54	0.01
Other issues	335	174	161	54.52	<0.001

Comparison of Suicide Risk and Mental Health Status of Unemployed or Jobless Callers based on Gender

There were statistically significant differences in suicide risk

and mental health status between male and female callers. The proportion of severe depression, suicidal ideation, suicidal planning, and suicide attempts was higher among male callers compared to female callers. Among high-risk individuals, the proportion of males was significantly higher than that of females (Table 3).

Table 3: Comparison of Suicide risks and mental health issues of unemployed or jobless based on gender [PCS (%)]

Mental health factor	Total (n=6297)	Male (n=2424)	Female (n=3873)	X2	P
Mood status					
Normal	5988	2276	3712	0.6	0.44
Mild depression	57	15	42	3.57	0.059
Moderate depression	81	39	42	3.19	0.074
Severe depression	171	94	77	19.61	<0.001
Suicide risk					
Have suicide ideation	1066	533	533	59.6	<0.001
Have suicide plan	92	63	29	34.93	<0.001
Suicide behaviour					
No	5988	2281	3717	0.55	0
Used to be	266	127	139	9.61	0.002
Preparing	17	11	6	4.93	0.026

Already	16	5	11	0.35	0.551
High risk call	114	69	45	23.37	<0.001

Comparison of Basic Characteristics of Unemployed or Jobless Callers Based on Age Groups

There were significant differences between different age groups of callers in terms of regional distribution, education level, time of call, and marital status. Among the young group, 57.5% of callers had a higher education level, while in the middle-aged group, only 22.8% had a higher education level, with

over 60% having a middle education level. The proportion of unmarried callers was 89.3% and 61.4% in the young and middle-aged groups, respectively. More than 60% of callers in the young group were from other provinces, while the majority of middle-aged callers were from the local area, accounting for 61.4%. The proportion of callers making calls during the second half of the night was higher in the young group compared to the other two groups (Table 4).

Table 4: Comparison of basic characteristics of unemployed or jobless callers based on age groups [PCS (%)]

Call time						
Daytime	2845 (45.2%)	1156 (40.9%)	970 (45.3%)	719 (53.9%)		
First half of the night	2042 (32.4%)	892 (31.6%)	681 (31.8%)	469 (35.2%)		
Second half of the night	1410 (22.4%)	777 (27.5%)	488 (22.8%)	145 (10.9%)		
Education level					559.264	<0.001
Low	1056 (18.8%)	345 (13.7%)	509 (26.8%)	202 (17.0%)		
Medium	2043 (36.5%)	727 (28.8%)	605 (31.9%)	711 (60.2%)		
High	2504 (44.7%)	1450 (57.5%)	785 (41.3%)	269 (22.8%)		
Marital status					2103.28	<0.001
Married	1012 (16.4%)	247 (8.9%)	489 (23.3%)	276 (20.9%)		
Single	4094 (66.3%)	2468 (89.3%)	1286 (61.4%)	340 (25.8%)		
Divorced or widowed	1073 (17.3%)	49 (1.8%)	320 (15.3%)	704 (53.3%)		
Region					781.442	<0.001
Hangzhou	2032 (32.5%)	501 (17.9%)	715 (33.6%)	816 (61.4%)		
Zhejiang province	1108 (17.7%)	601 (21.4%)	381 (17.9%)	126 (9.5%)		
Other province	3120 (49.8%)	1703 (60.7%)	1029 (48.4%)	388 (29.2%)		

Comparison of the Types of Calls from Different Age Groups of Unemployed or Jobless Individuals

There are significant differences in the main issues discussed by callers from different age groups who seek advice by calling the hotline. Upon pairwise comparisons, it was found that the

proportion of callers from the youth group seeking advice on matters related to relationships, work, and education is significantly higher compared to the other two groups. Middle-aged callers, on the other hand, show a significantly higher proportion of inquiries regarding mental health and child education issues. Among the three groups, the proportions of callers seeking assistance with mental health issues are 65.8%, 70.6%, and 78.8%, respectively (Table 5).

Table 5: Comparison of the Types of Calls from Different Age Groups of Unemployed or Jobless Individuals [PCS (%)]

Consultation issues	Total (n=6297)	Youth group 1 (n=2825)	Middle-aged youth group 2 (n=2139)	Middle-aged group 3 (n=1333)	Pairwise comparison P<0.05
Physical illness	75 (1.2%)	37 _a (1.3%)	18 _a (0.8%)	20 _a (1.5%)	
Mental health issues	4418 (70.2%)	1859 _a (65.8%)	1510 _b (70.6%)	1049 _c (78.8%)	1 < 2 < 3
Romantic relationship issues	347 (5.5%)	237 _a (8.4%)	89 _b (4.2%)	21 _c (1.6%)	1 > 2 > 3
Marital and family issues	578 (9.2%)	260 _a (9.2%)	214 _a (10.0%)	104 _a (7.8%)	
Sexual issues	32 (0.5%)	19 _a (0.7%)	10 _a (0.5%)	3 _a (0.2%)	
Parenting and child education issues	48 (0.8%)	3 _a (0.1%)	24 _b (1.1%)	21 _b (1.6%)	1 < 23
Work-related issues	267 (4.2%)	167 _a (5.9%)	94 _a (4.4%)	6 _b (0.5%)	1 2 > 3

Interpersonal relationship issues	155 (2.5%)	75 _a (2.7%)	51a (2.4%)	29 _a (2.2%)	
Learning issues	41 (0.7%)	35 _a (1.2%)	6b (0.3%)	0 _b (0.0%)	1 > 2 3
Other issues	335 (5.3%)	133 _a (4.7%)	123a (5.8%)	79 _a (5.9%)	

Comparison of Suicide Risk and Psychological Well-being among Different Age Groups of Unemployed or Jobless Individuals

The differences in suicide risk and psychological well-being

among callers from different age groups are statistically significant. Upon pairwise comparisons, it was found that the proportion of severe depression, suicide risk, and high-risk individuals among callers from the youth group is significantly higher compared to the other two groups (Table 6).

Table6: Comparison of Suicide Risk and Psychological Well-being among Different Age Groups of Unemployed or Jobless Individuals [PCS (%)]

Mental health factor	Total (n=6297)	Youth group 1 (n=2825)	Middle-aged youth group 2	Other issues	Other issues
Mood status					
Normal	5988 (95.1%)	2603a (92.1%)	2072b (96.9%)	1313c (98.5%)	1<2<3
Mild depression	57 (0.9%)	40a (1.4%)	13b (0.6%)	4b (0.3%)	1>23
Moderate depression	81 (1.3%)	63a (2.2%)	12b (0.6%)	6b (0.5%)	1>23
Severe depression	171 (2.7%)	119a (4.2%)	42b (2.0%)	10c (0.8%)	1>2>3
Suicide risk					
Have suicidal ideation	1066 (16.9%)	707a (25%)	290b (13.6%)	69c (5.2%)	1>2>3
Have suicide plan	92 (1.5%)	64a (2.3%)	23b (1.1%)	5b (0.4%)	1>23
Suicide risk					
No	5998 (95.3%)	2613a (92.5%)	2074b (97%)	1333c (98.3%)	1<2<3
Used to be	266 (4.1%)	186a (6.6%)	59b (2.8%)	21b (1.6%)	1>23
Preparing	17 (0.3%)	13a (0.5%)	3a (0.1%)	1a (0.1%)	
Already	16 (0.3%)	13a (0.5%)	3a,b (0.1%)	0b (0%)	1>3
High-risk call	114 (1.8%)	78a (2.8%)	29b (1.4%)	7b (0.5%)	1>23

Comparison of Psychological Well-being among Unemployed or Jobless Individuals Based on Call Time

The differences in suicide risk and mental health conditions related to suicide among unemployed or jobless individuals are statistically significant based on the time of the calls. Upon pairwise comparisons, it was observed that the proportion of

mildly depressed callers is higher during nighttime compared to daytime. Callers with suicidal plans have a significantly higher proportion of calls received during the late night compared to daytime. Callers without suicidal behaviors tend to call during the early night, while those actively preparing for suicide demonstrate a significantly higher proportion of calls during the late night compared to daytime. Furthermore, among high-risk callers, the proportion of calls during the late night is also significantly higher than during daytime (Table 7).

Table7: Comparison of Psychological Well-being among Unemployed or Jobless Individuals Based on Call Time [PCS (%)]

Mental health factor	Total (n=6297)	daytime 1 (n=2845)	first half of night 2 (n=2042)	second half of night 3 (n=1410)	Pairwise comparison P<0.05
Mood status					
normal	5988 (95.1%)	2726a (95.8%)	1939a,b (95%)	1323b (93.8%)	1>3
mild depression	57 (0.9%)	9a (0.3%)	29b (1.4%)	19b (1.3%)	1<23
Moderate depression	81 (1.3%)	26a (0.9%)	33a (1.6%)	22a (1.6%)	
severe depression	171 (2.7%)	84a (3%)	41a (2%)	46a (3.3%)	
Suicide risk					
have suicidal ideation	1066 (16.9%)	601a (21.1%)	243b (11.9%)	222c (15.7%)	1>3>2
have suicide plan	92 (1.5%)	33a (1.2%)	27a,b (1.3%)	32b (2.3%)	1<3
Suicide behaviour					
no	5998 (95.3%)	2673a (94%)	1980b (97%)	1345a (95.4%)	2>13
used to be	266 (4.1%)	166a (5.8%)	49b (2.4%)	51b (3.6%)	1>23
preparing	17 (0.3%)	3a (0.1%)	9a (0.4%)	5a (0.4%)	3>1
already	16 (0.3%)	3a (0.1%)	4a,b (0.2%)	9b (0.6%)	
High-risk call	114 (1.8%)	34a (1.2%)	38a,b (1.9%)	42b (3%)	3>1

DISCUSSION

This study found that although the hotline is based in Hangzhou, callers from the Young and middle-aged unemployed or jobless callers are spread across the country, indicating that the sample in this study can represent the situation of hotline callers nationwide. From the data in **Table 1**, we found that 62.8% of male callers are from other provinces, while the proportion of female callers from the local area (40%) is significantly higher than that of males (19.2%). This indirectly reflects the effective promotion and high visibility of the psychological assistance hotline in Hangzhou. Taking into account Hangzhou's economic and cultural development level, the overall living standards and level of education among women in Hangzhou are relatively higher compared to those from other provinces. Consequently, they are more likely to prioritize psychological issues and seek help at a relatively higher rate when faced with such problems. This study sheds light on another advantage of hotline telephone consultation from a different perspective, as it is not constrained by geographical or time limitations. It enables individuals in need to access psychological services remotely, promptly identifying potential callers with psychological issues and providing referral services to facilitate timely professional diagnosis and treatment.

Mental and psychological issues are the main topics of consultation for young and middle-aged unemployed individuals, similar to research findings abroad [8]. Studies have shown that unemployed individuals experience higher levels of distress and lower levels of happiness compared to those who are employed, significantly increasing the suffering of unemployed individuals [9]. In fact, mental and psychological disorders have ranked first in the overall burden of disease in China, accounting for approximately 20% and showing a growing trend. This demonstrates that as social competition intensifies, not only limited to the unemployed population, the psychological burden on humanity is increasing, and untreated psychological disorders can develop into serious mental illnesses. Considering that current hotline counselors in China are not medical professionals and most of them do not have qualifications in psychiatry, there are a relatively high number of callers seeking support for mental illnesses and depressive emotions. Therefore, hotlines need to provide mental health training for hotline counselors, especially in the area of common psychological issues related to unemployment. This training would help hotline counselors acquire basic knowledge, enhance their ability to discern potential psychological problems in callers, and promptly refer them to specialized institutions for services.

From the data presented in **Table 1**, it can be observed that males tend to call during the evening while females tend to call during the daytime. Generally, people are more inclined to call a mental health hotline when they are alone. Once the feeling of loneliness is disrupted, the hotline also stops receiving calls. The difference in the number of calls made by males and females during night shifts and day shifts may be related to differences in their alone time. The difference in alone time between males and females also reflects gender role differences. Furthermore, an interesting phenomenon was discovered: Among the callers, the proportion of married women (20.4%) was significantly higher than that of men (9.9%), and the over-

all educational level of women was higher than that of men the proportion of women with moderate educational level (40%) and higher educational level (45.8%) was higher than that of men (30.7% and 42.9% respectively), while the proportion of men with low educational level (26.4%) was significantly higher than that of women (14.3%). By comparing the data in **Table 3**, we can boldly speculate that marital status and educational level influence the mental health status of men and women. In fact, many studies have also confirmed this speculation. As the level of education increases, callers' social functioning and identity recognition improve, indicating that they have higher mental health literacy and a lower risk and severity of psychological problems. Additionally, previous research has shown that individuals with higher educational attainment often have partners with similar educational backgrounds, meaning that highly educated individuals are more likely to understand and empathize with each other [10].

Based on the relevant data in **Table 2**, it can be observed that women (11.5%) make more hotline calls on marriage and family topics compared to men (5.4%). This corresponds to the traditional cultural views of men's family roles. Over time, women have increasingly emphasized marriage and family relationships, while men have shown a greater need for achieving higher social status through work. This may also be a contributing factor to why men (5.9%) are more likely than women (3.2%) to focus on work-related issues. On the whole, men have a higher proportion of consultations for mental and psychological problems, sexual issues, and work-related problems, while women have a higher proportion for dating issues, marriage and family problems, child education, and interpersonal relationship problems. These disparities are related to the distinct gender roles of men and women in society and the family. The findings of this study align with the current situation in our country and emphasize the need to provide tailored services based on the specific concerns of individuals of different genders.

The data in **Table 3** deviate somewhat from foreign research results. In China, the proportion of men with severe depression, suicidal ideation, suicidal plans, and suicidal behaviors is higher than that of women. Among high-risk groups, men also have a significantly higher proportion than women. The role of gender in the relationship between unemployment and mental health has been discussed in classical literature (Jahoda, 1982) [11]. Thus far, the results have remained inconclusive, with even meta-analyses yielding different conclusions. For instance, McKee-Ryan et al. found that the mental health status of unemployed women was poorer, whereas Pau and Moser found that men were more affected by unemployment than women [12]. From a theoretical standpoint, personal consequences of unemployment should not be determined solely by gender. Instead, it is necessary to understand the differences between men and women in the family, labor market, and society from a structural perspective [13,14]. In summary, hotline counseling services in our country should be tailored to our specific circumstances and must not simply replicate foreign experiences. They should be developed based on our country's socio-economic, political, and cultural background to provide targeted services that are relevant to our actual situation.

Our research has found that the proportion of phone calls made during the second half of the night is higher among

young people compared to the other two groups. The proportion of high-risk incoming calls is also significantly higher during the second half of the night compared to daytime and the first half of the night. Callers making phone calls during the second half of the night tend to have poorer mental health, with higher levels of depressive symptoms and a higher likelihood of engaging in suicidal behaviors. Previous studies have suggested that during the early morning hours, individuals are more likely to feel a lack of social support, vulnerability, and despair. This can lead to catastrophic thinking and lower impulse control, increasing the risk of suicide [15]. Additionally, previous research has found a higher frequency of suicidal behavior during the early morning hours, which may be related to sleep disturbances as a risk factor for suicide. Insomnia can increase the risk of individuals waking up during a vulnerable time for suicide, thereby enhancing the overall suicide risk [16].

This study supports the aforementioned conclusions and further finds that young unemployed or jobless individuals who make phone calls during the second half of the night generally have poorer overall psychological well-being. They are more likely to experience severe depressive symptoms and a sense of hopelessness, both of which are high-risk factors for suicide. Moreover, the overall poor psychological well-being during the second half of the night prompts these individuals to seek support and assistance through hotlines during this time. The study suggests that interventions targeting sleep difficulties may help alleviate suicide risk, and it also highlights the need for hotline counselors to strengthen their assessment of the mental health status, particularly suicide risk, among late-night callers to prevent suicidal behavior.

In terms of educational attainment (Table 4), the majority of the youth group has higher education degrees (57.5%), while only 22.8% of the middle-aged group has high educational levels, with over 60% having a moderate education level. In the context of China's societal and cultural background, individuals with higher educational degrees often face greater expectations, consequently experiencing higher psychological pressures. Combined with the data in Table 6, the psychological well-being of the youth group and the young-middle-aged group is relatively poorer compared to the middle-aged group, indicating that adolescents and young adults subjectively perceive higher levels of stress than the middle-aged group? This could be attributed to their lack of social experience and poorer ability to regulate their mindset. It suggests that hotline counselors should provide guidance on simple and feasible psychological regulation skills when providing psychological support to this age group. Additionally, we found that the proportion of unmarried callers in the young-middle-aged group is as high as 61.4%. For the unemployed or jobless population, "marriage" serves as one of the sources of psychological stress.

This study also found that approximately 6.6% of young callers had a history of suicide attempts, and 0.5% of callers were engaged in suicidal behavior during the call. This indicates that young individuals (between 19 and 29 years old) in the unemployed or jobless population have a higher risk of suicide. This finding is consistent with research conducted on the Beijing Psychological Assistance Hotline, which showed that the suicide risk among the unemployed population was 1.46 times

higher than the general population [17]. The higher suicide risk may be related to the suicide prevention function provided by the hotline [18]. Most callers reach out due to crisis situations. This underscores the importance of providing timely crisis intervention for young unemployed or jobless individuals who exhibit suicidal behavior. It is crucial for preventing and reducing suicides in this population. Currently, the hotline interventions in our country focus only on assessment and immediate emotional relief [19]. In the future, there is a need to expand the hotline's services to provide professional interventions specifically targeted at this group of young unemployed or jobless individuals.

CONCLUSION

In conclusion, unemployed or jobless young people are a high-risk group for mental health issues. Thus, ensuring appropriate services and support for this population should be a priority for policy-making, not only from an economic standpoint but also from a public health perspective. The differences in counseling issues and mental health between different age groups primarily stem from economic and familial responsibilities and the roles played in identity development [20]. Overall, the psychological state of young unemployed or jobless individuals who contact hotlines is poor, particularly among those between 19 and 29 years old, males, and those who call during the late hours of the night. They exhibit higher levels of depression, lower levels of hope, and increased suicide risk. This study highlights the need to pay attention to the mental health of hotline callers from this group and to improve assessment and relevant interventions.

There are limitations in this study. Hotlines provide structured counseling services, which can limit the information collected and prevent the gathering of more individualized information about factors such as duration of unemployment, physical health status, and family economic status. Additionally, the study sample only included young unemployed or jobless callers to the hotline and may not represent the entire population of unemployed or jobless individuals.

DECLARATIONS

Ethical Approval

This is a retrospective study with no ethical implications.

Competing Interests

I declare that the authors have no competing interests as defined by BMC, or other interests that might be perceived to influence the results and/or discussion reported in this paper.

Dual Publication

The results/data/figures in this manuscript have not been published elsewhere, nor are they under consideration (from you or one of your Contributing Authors by another publisher.

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Author Contribution

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