Suicide Prevention Across the Lifespan: Older Adults

1700 Too Many
New York State Suicide Prevention Conference

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CDC Injury Control Research
Center on Suicide Prevention:
ICRC-S
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  - CDC U01CE001942: Y. Conwell, MD, PI; 9/30/10-9/29/16.
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  - NIMH K23: K. Van Orden, PI

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Eldersource
- Ann Marie Cook
- Jody Rowe
- Eldersource Staff

CDC/NIMH partners
... and many more
Significance

- Older adults are the most rapidly growing segment of the population.
Population age 65 and over and age 85 and over, selected years 1900–2008 and projected 2010–2050

NOTE: Data for 2010–2050 are projections of the population.
Reference population: These data refer to the resident population.
Worldwide Suicide Rates, WHO

Distribution of suicide rates (per 100,000) by gender and age, 2000

<table>
<thead>
<tr>
<th>Age group</th>
<th>Males</th>
<th>Females</th>
</tr>
</thead>
<tbody>
<tr>
<td>5-14</td>
<td>1.5</td>
<td>0.4</td>
</tr>
<tr>
<td>15-24</td>
<td>22.0</td>
<td>4.9</td>
</tr>
<tr>
<td>25-34</td>
<td>30.1</td>
<td>6.3</td>
</tr>
<tr>
<td>35-44</td>
<td>37.5</td>
<td>7.7</td>
</tr>
<tr>
<td>45-54</td>
<td>43.6</td>
<td>9.6</td>
</tr>
<tr>
<td>55-64</td>
<td>42.1</td>
<td>10.6</td>
</tr>
<tr>
<td>65-74</td>
<td>41.0</td>
<td>12.1</td>
</tr>
<tr>
<td>75+</td>
<td>50.0</td>
<td>15.8</td>
</tr>
</tbody>
</table>
Significance

- Older adults are the most rapidly growing segment of the population.
- Older adults have higher rates of suicide than other segments of the population.
- In successive cohorts the problem may be worse.
- Suicidal behavior is more lethal in later life than at other points in the life course.
ATTEMPTED : COMPLETED SUICIDE

General population
- 1 Death
- 5 Hospitalizations
- 30 Emergency Dept visits

Older adults
- 1 Death
- 2 Hospitalizations
- 4 Emergency Dept visits
METHODS OF SUICIDE IN THE U.S.

Total

Age > 65

- FIREARMS
- Hanging, Strangulation, suffocation
- Solid & liquid poisons
- Gas Poisons
- Jump from high place
- All other methods

- Total
- Age > 65
LETHALITY OF LATE LIFE SUICIDE

• Older people are
  – more frail (more likely to die)
  – more isolated (less likely to be rescued)
  – more planful and determined

• Implying
  – Interventions must be aggressive (indicated)
  – More distal prevention is key (selective and universal)
PSYCHOPATHOLOGY

SOCIAL CONTEXT

FUNCTIONING

PERSONALITY, COPING STYLE

PHYSICAL HEALTH

FIREARM ACCESS
Medical Illness and Suicide Risk
Juurlink et al., Arch Intern Med 2004;164:1179-1184
# RISK FACTOR: Psychiatric Dx in case/control studies of suicide in later life

<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>Any Axis I dx</td>
<td>--</td>
<td>43.9</td>
<td>113.1</td>
<td>56.0</td>
<td>50.0</td>
</tr>
<tr>
<td>Any mood d/o</td>
<td>4.0</td>
<td>184.6</td>
<td>63.1</td>
<td>56.0</td>
<td>59.2</td>
</tr>
<tr>
<td>Maj dep episode</td>
<td>--</td>
<td>184.6</td>
<td>28.6</td>
<td>14.0</td>
<td>36.3</td>
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<tr>
<td>Subst use d/o</td>
<td>ns</td>
<td>4.4</td>
<td>43.1</td>
<td>3.0</td>
<td>ns</td>
</tr>
<tr>
<td>Anxiety disorder</td>
<td>--</td>
<td>--</td>
<td>3.6</td>
<td>3.0</td>
<td>ns</td>
</tr>
<tr>
<td>Schiz spectrum</td>
<td>ns</td>
<td>--</td>
<td>10.7</td>
<td>ns</td>
<td>&gt;1</td>
</tr>
<tr>
<td>Dementia/del</td>
<td>0.2</td>
<td>--</td>
<td>ns</td>
<td>ns</td>
<td>ns</td>
</tr>
</tbody>
</table>

ns = not significant
Review of Social Factors in Late Life Suicide

Table 2. Box score summary of review findings.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Number of studies</th>
<th>Some evidence of association with outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>Marital status</td>
<td>11</td>
<td>4</td>
</tr>
<tr>
<td>Living arrangement</td>
<td>11</td>
<td>3</td>
</tr>
<tr>
<td>Religion</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Frequency of social contact</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Low social integration</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Social support</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Loneliness</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Relationship discord</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

A One study found that absence of relationship discord was associated with suicidal ideation [33].

Elderly man with rigid personality and chronic back pain becomes unable to work... and depressed. Isolated from social supports. ...
PREVENTION FRAMEWORK

**HOW DO WE PREVENT SUICIDE IN ELDERS?**

(Approaches to Prevention)
Institute of Medicine Terminology: “LEVELS” OF PREVENTIVE INTERVENTION

“Indicated” – symptomatic and ‘marked’ high risk individuals – interventions to prevent full-blown disorders or adverse outcomes.

“Selective” – high-risk groups, though not all members bear risks – prevention through reducing risks.

“Universal” – focused on the entire population as the target – prevention through reducing risk and enhancing health.
OPTIMAL SUICIDE PREVENTION =

Indicated

+ 

Selective

+ 

Universal

“MULTI-LAYERED SUICIDE PREVENTION”
OPTIMAL SUICIDE PREVENTION =

Indicated – *detect and treat depression*

+ 

Selective – *optimize independent functioning, increase social connectedness*

+ 

Universal – *education to reduce ageism, promote gun safety*
Importance of Social Connectedness in Later Life

- **Mental Health**: depression, hopelessness, Well-being
- **Physical health**: Subjective perceptions; Presence of disease
- **Cognition**: Better memory & planning; Lower risk for dementia
- **Functional Impairment**: Mobility, Self-care, Strength

Social Connection
Cumulative incidence of suicide by social integration category in the Health Professionals Follow-up Study

Men, ages 40 – 75 years

Cumulative incidence of suicide by social integration category in the Nurses’ Health Study

Women, ages 46 – 71 years

INTERPERSONAL THEORY OF SUICIDE

Suicide

Thwarted Belongingness

Perceived Burden

Capability

Joiner (2005); Van Orden et al. (2010)
OBJECTIVE: To examine whether ENGAGE psychotherapy (that targets social engagement) is effective in reducing risk for suicide.

- Randomized trial: ENGAGE vs. CAU
- Inclusion: Endorse loneliness/perceived burden
- Hypotheses: (1) Targeting social engagement will indirectly reduce suicide risk by increasing belonging and reducing perceived burden, (2) Changes in belonging & burden will temporally precede (pilot) or mediate (full study) changes in suicide risk.
Background

- This project uses the ENGAGE intervention (Alexopoulos & Areán, 2014; Alexopoulos, Raue, Kiosses, Seirup, Banerjee, & Areán, 2014) as a means of increasing social engagement, and thereby reducing risk factors for suicide.

- ENGAGE is designed to work primarily through “reward exposure” (engaging in pleasant activities is reinforcing).

- Patients (re)-engage with social activities they may have stopped doing because of depression/functional impairment, or never engaged in at all.

- Subjects were focused solely on social activities.
Model of Intervention Effects Grounded in The Interpersonal Theory of Suicide

- Social engagement
- Positive connections & contributions
- Loneliness and burdensomeness
- Suicide risk
ENGAGE

▪ 10 psychotherapy sessions offered in the home.

▪ Developed from Problem Solving Treatment
  ○ Designed to be easier to implement & in line with RDoC domains
  ○ For PST info: https://aims.uw.edu/resource-library/problem-solving-treatment-pst

▪ “Action Plans” – the tool used to teach the skill of increasing social engagement—the focus for this study.
  ○ Note: as originally developed, ENGAGE also targets increasing pleasant and physical activities
People who have depression often engage in fewer social activities than do non-depressed people.

Then, because they are depressed, they are less likely to seek out social activities...

Which makes them less likely to seek out social activities...

Having a lack of social activities may cause a person to become depressed.

Which makes them more depressed...

ENGAGE will stop the downward cycle by helping you to become more socially engaged using action plans. In turn, we hope you will feel better and be more satisfied with your life!
## Activity List

<table>
<thead>
<tr>
<th>#</th>
<th>Activity</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Walking</td>
<td>If I put my mind to it.</td>
</tr>
<tr>
<td>5</td>
<td>Exercise machine</td>
<td>go to lunch/dinner</td>
</tr>
<tr>
<td>6</td>
<td>Get out more</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>See shows - Broadway shows</td>
<td></td>
</tr>
</tbody>
</table>

## Activity List

- Ceramics
- Painting classes - watercolor
- Gardening, plants
- Yoga
- Treadmill
- Fish
- Volunteer work
“Baby Steps”

1. My goal is: get out and be around people

2. Ideas for meeting my goal:
   
   a. Library - read by fireplace
   
   b. Go window shopping or shopping for new mats, shoes
   
   c. Sunday evening at Christ Church sings

3. Which of the above is:
   
   a. Something you could see yourself doing? a b c
   
   b. Will not cost you anything (time and money)? a b c
   
   c. Will not cause another problem? a b c
   
   d. Most likely to help you do what you want to do? a b c

4. Barrier Strategy is: inertia → look at action plan

5. Steps (What will you do? When? Who is involved? Where will it happen? What do you need?):
   
   □ Thurs or Friday
   
   □ 30 mins reading at library
   
   □ bring blank notebook
   
   □ 

6. How did you do?

   😊😊😊

7. If you couldn’t do your plan, what got in the way? ____________________________
1. My goal is: be pleasant with sister at garage sale

2. Ideas for meeting my goal:
   a. rubber band reminder when notice negative thoughts
   b. telling my mind to “drop the thoughts”
   c. ask sister about her life
   d. ask for her help/assistance

3. Which of the above is:
   a. Something you could see yourself doing?
   b. Will not cost you anything (time and money)?
   c. Will not cause another problem?
   d. Most likely to help you do what you want to do?

4. Barrier Strategy is: n/a

5. Steps (What will you do? When? Who is involved? Where will it happen? What do you need?):
   - find bracelet
   -
   -
   -
   -

6. How did you do?
   ☃ ☃ ☃ ☃

7. If you couldn’t do your plan, what got in the way?

“Conflict”
“Working Out”

1. My goal is: **attend the fitness class**

2. Ideas for meeting my goal:
   a. If had someone to go with - ask someone
   b. Introduce myself to someone, chat with them
   c. Put it on calendar

3. Which of the above is:
   a. Something you could see yourself doing?  
   b. Will not cost you anything (time and money)?  
   c. Will not cause another problem?  
   d. Most likely to help you do what you want to do?  

4. Barrier Strategy is: ____________________________

5. Steps (What will you do? When? Who is involved? Where will it happen? What do you need?):
   - [ ] Call someone - friend, when she moves in, about LIFE Fitness
   - [x] Try chair fitness tomorrow
   - [ ] Introduce myself to someone in class
   - [ ] ________________________________

6. How did you do?  
   ☑ ☑ ☑

7. If you couldn’t do your plan, what got in the way?  
   ________________________________
Barriers: Apathy

- Reminders: notes around house, problem worksheet on fridge
- Involve family in session
- Start action plan IN SESSION
Emotion dysregulation

- Progressive muscle relaxation
- Mindfulness
- Imagery
- Prayer

RELAXATION TRAINING

Close your eyes and think of a beautiful picture that makes you relax.

Take a deep breath through your nose, like filling your stomach with air.

Hold your breath and count to 5.

Exhale slowly until all air is out (sometimes as you exhale, it may be helpful to whisper a word slowly, for example, “relax”).

Wait for 5 seconds.

Repeat.

Please practice these exercises according to the therapist’s recommendations before you apply them in an anxiety provoking situation.

Write down your thoughts and feelings and rate the effectiveness of the exercises on a scale of 1-10 (1=not effective; 10=most effective) after each training session.

Please be aware that they may be an increase in anxiety in the beginning of the training sessions before the exercises are effective.
Pilot Study Results

- All subjects were willing and able to generate social engagement goals each session
  - Taking a walk to see a friend; going to get ice cream with her daughter; helping out by walking the neighbor’s dog, etc.

- Qualitative outcomes indicate subjects believed increased social engagement lead to greater positive mood and well-being.
  - “Socializing, it helps my mood to get out. Being around people does lift you up.”
  - “I have a reason to keep going, a direction, a family…Action plans helped aim me—direction, got me back on track…I’ll do things to feel the outside connections, like getting on the phone.”
Note: For all measures, higher scores indicate more difficulties in that domain
Discussion

- It is feasible to focus solely on social engagement goals with the ENGAGE treatment
- Even in our small sample, decreases in suicide risk and depression severity were evidenced
- Changes in one of the proposed treatment targets—thwarted belongingness—were smaller than expected and occurred later in the treatment than expected.
  - It may be that even very small decreases in thwarted belongingness are associated with reductions in suicide risk; alternatively, another target/mechanism may be accounting for the decrease in suicide risk evidenced in these subjects.
  - A larger randomized pilot trial is underway (K23MH096936) to test the hypothesis generated from the Interpersonal Theory of Suicide that reducing thwarted belongingness/perceived burdensomeness are mechanisms whereby interventions reduce suicide risk in later life.
OBJECTIVE: To examine whether linking socially disconnected seniors with peer supports is effective in reducing risk for suicide.

AIMS:
- Compare TSC vs. CAU on proximal (SI, DI) and distal (social connectedness) risk factors
- Test mediation.
### Structural Connectedness
- Social Support
  - Instrumental
  - Interactions
- Social Network
  - Size, Density
  - Quality
- Service Use
  - Formal
  - Informal

### Psychological Connectedness
- Thwarted (low) belongingness
- Perceived burdensomeness

### Suicide Risk Indicators
- Suicide ideation
- Death ideation
- Depression
- Meaning in Life

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**The Relationship of Social Connectedness and Suicide**

K.A. Van Orden et al. / Contemporary Clinical Trials 35 (2013) 117–126

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RCT DESIGN:

- **Sample**: 368 primary care pts ≥60 yrs who endorse feeling lonely or like a burden on others.
- **Intervention**: Peer companion trained and supervised by aging services network agency
- **Control**: Care as usual (no companion)

**Outcome measures**:
- Depression, suicidal ideation, death ideation
- Structural and psychological connectedness
# TSC Primary Measures

<table>
<thead>
<tr>
<th>Measures</th>
<th>Constructs Assessed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interpersonal Needs Questionnaire (INQ)</td>
<td>Thwarted belongingness (TB), perceived burdensomeness (PB).</td>
</tr>
<tr>
<td>Patient Health Questionnaire (PHQ-9)</td>
<td>Depression symptoms</td>
</tr>
<tr>
<td>General Anxiety Disorders-7 (GAD-7)</td>
<td>Anxiety Symptoms</td>
</tr>
<tr>
<td>Geriatric Suicide Ideation Scale</td>
<td>Death ideation (DI), suicidal ideation (SI), personal/ social worth (PSW), meaning in life (ML), total score</td>
</tr>
</tbody>
</table>
THE SENIOR CONNECTION (TSC) Intervention

TSC: Delivered by Lifespan’s RSVP program

- Volunteers
- Peers, ≥ 55 years
- Trained by agency
- Weekly contact
- Primarily friendly visiting, some instrumental activities
Number Randomized
N = 368

54% 46%

Age: 70.90 years (sd 7.76)
Range 60-97 years
Live alone 53%
86% white
# Lifetime Suicidal ideation & behavior

<table>
<thead>
<tr>
<th></th>
<th>Proportion endorsing*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paykel 1: <em>life not worth living</em></td>
<td>.50</td>
</tr>
<tr>
<td>Paykel 2: <em>wished you were dead</em></td>
<td>.36</td>
</tr>
<tr>
<td>Paykel 3: <em>thought of taking own life</em></td>
<td>.47</td>
</tr>
<tr>
<td>Paykel 4: <em>seriously considered/made plans</em></td>
<td>.18</td>
</tr>
<tr>
<td>Paykel 5: <em>Attempted suicide</em></td>
<td>.13</td>
</tr>
<tr>
<td>PHQ-9 item 9: <em>Current death/suicide ideation</em></td>
<td>.05</td>
</tr>
<tr>
<td>GSIS item 4: <em>I want to end my life</em></td>
<td>.06</td>
</tr>
<tr>
<td>GSIS item 11: <em>At times I think that If things get much worse for me, I will end my life.</em></td>
<td>.06</td>
</tr>
<tr>
<td>GSIS item 12: <em>I have recently been thinking a great deal about specific ways of killing myself</em></td>
<td>.04</td>
</tr>
<tr>
<td>GSIS item 25: <em>I might do something to end it all if I could only muster the energy to do so.</em></td>
<td>.02</td>
</tr>
</tbody>
</table>

For Paykel items, responses are yes/no and endorsement reflects a “yes” response. For GSIS items, responses are on a 5-pt Likert scale: Strongly Disagree (1), Disagree (2), Neither Agree nor Disagree (3), Agree (4), Strongly Agree (5); for these items endorsement reflects a response of 3 or greater.
Differences in suicide variables at baseline

TSC: N=28, 15%

CAU: N=18, 10%

TSC: greater past attempts, greater PB, current SI/DI, more IADL impairments

In subsequent analyses, adjusted for baseline differences.
Intent to treat analyses

• Assessment points; 12 month outcomes

• Weighted generalized estimating equations (WGEE)
  • Longitudinal data
  • Weighted for functional impairment at baseline (as this variable predicts ‘missingness’)
  • Pre/post and time x intervention interaction
INQ thwarted belonging (0-18)

Least squares means

Interaction *ns*

<table>
<thead>
<tr>
<th></th>
<th>TSC (Base)</th>
<th>TSC (12 months)</th>
<th>CAU (Base)</th>
<th>CAU (12 months)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-2</td>
<td>5.27</td>
<td>3.71</td>
<td>5</td>
<td>3.38</td>
</tr>
</tbody>
</table>

* p<.05
INQ perceived burden (0-12)

Least squares means
Interaction*

<table>
<thead>
<tr>
<th></th>
<th>TSC</th>
<th>CAU</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Base</td>
<td>12 months</td>
</tr>
<tr>
<td>0</td>
<td>1.65</td>
<td>1.43</td>
</tr>
<tr>
<td>2</td>
<td>1.19</td>
<td>1.34</td>
</tr>
</tbody>
</table>

* p<.05
INQ perceived burden:
3 way interaction
time X condition X IADL
Geriatric Suicide Ideation Scale

Least squares means
Interaction, ns

* p<.05

TSC
- Base: 19.29
- 12 months: 17.98

CAU
- Base: 18.64
- 12 months: 16.95

* *
PHQ-9 Depressive Symptoms (0-27)

Least squares means
Interaction*

<table>
<thead>
<tr>
<th></th>
<th>TSC Base</th>
<th>TSC 12 months</th>
<th>CAU Base</th>
<th>CAU 12 months</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
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<tr>
<td>6</td>
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<td>9</td>
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<tr>
<td>12</td>
<td>8.67</td>
<td>6.34</td>
<td>8.28</td>
<td>6.96</td>
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<tr>
<td>15</td>
<td></td>
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<td>18</td>
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<td>24</td>
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<tr>
<td>27</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Significant at p < 0.05
GAD-7 Anxiety Symptoms (0-21)

Least squares means
Interaction*

<table>
<thead>
<tr>
<th></th>
<th>TSC</th>
<th>CAU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base</td>
<td>8.08</td>
<td>7.86</td>
</tr>
<tr>
<td>12 months</td>
<td>6.56</td>
<td>7.58</td>
</tr>
</tbody>
</table>

* Indicates statistical significance.
“DOSE” – Monthly average

<table>
<thead>
<tr>
<th>Phone calls</th>
<th>Phone mins</th>
<th>Meetings</th>
<th>Meeting time</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.0</td>
<td>31 mins</td>
<td>1</td>
<td>106 mins (1.76 hrs)</td>
</tr>
</tbody>
</table>
Subjects’ perceived benefits

1. Because I have a companion:
   1. I feel less lonely: **52%** strongly agree
   2. I feel I have close ties to more people: **34%** strongly agree
   3. I am more satisfied with my life: **34%** strongly agree

2. I eagerly looked forward to contacts with my peer companion: **50%** strongly agree

3. I felt as if I was a burden on my peer companion: **1%** (agree)

4. My peer companions(s) helped me with tasks that were difficult for me to get accomplished **5%** (strongly)
Qualitative data

It's very helpful to me. We have fun together, we grocery shop together, we laugh and talk. I asked her about ending the study—she said "You're not getting rid of me that easily!"

It makes me feel better, to have somebody like her. She calls if she can’t come over. She gives me a chance to do things I couldn’t do otherwise. Walks, shopping, coffee. She’s just that kind of a person. I’d give her an A+.

I wouldn't have moved here if it weren't for her help- we talk about everything- we are close and she and I talk about my problems and concerns

She's becoming a good friend. We're becoming closer, we confide in each other and talk on the phone.
Discussion

• Peer companionship reduces perceived burden, depression, anxiety:
  • low cost intervention
  • already implemented nationwide,
  • promising intervention for reducing late-life mental health problems that elevate suicide risk.
  • However, frequent follow-ups by kind assessors, an intervention in itself?

• Peer companionship appreciated by most:
  • acceptable, even when individuals did not actively seek out peer companionship!

• Upcoming:
  • 6 month (more subjects) and 24 month (longer duration).
Thank you

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